LG

COLOR TV
SERVICE MANUAL

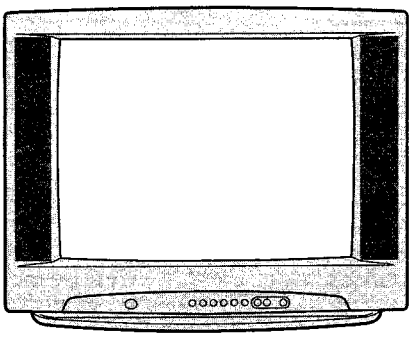
CHASSIS : PC-81B(CL-20/21T24X)

MODEL : CL-20/21N52X

CF-20T24T (20")
CF-21T24T (21") **(Stereo)**

CAUTION

BEFORE SERVICING THE CHASSIS,
READ THE SAFETY PRECAUTIONS IN THIS MANUAL.



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SAFETY PRECAUTIONS

IMPORTANT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These parts are identified by ⚠ in the Schematic Diagram and Replacement Parts List.
It is essential that these special safety parts should be replaced with the same components as recommended in this manual to prevent X-RADIATION, Shock, Fire, or other Hazards.
Do not modify the original design without permission of manufacturer.

General Guidance

An **Isolation Transformer should always be used** during the servicing of a receiver whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks.

It will also protect the receiver and it's components from being damaged by accidental shorts of the circuitary that may be inadvertently introduced during the service operation.

If any fuse (or Fusible Resistor) in this TV receiver is blown, replace it with the specified.

When replacing a high wattage resistor (Oxide Metal Film Resistor, over 1W), keep the resistor 10mm away from PCB.

Keep wires away from high voltage or high temperature parts.

Due to high vacuum and large surface area of picture tube, extreme care should be used in **handling the Picture Tube**. Do not lift the Picture tube by it's Neck.

X-RAY Radiation

Warning:

The source of X-RAY RADIATION in this TV receiver is the High Voltage Section and the Picture Tube.
For continued X-RAY RADIATION protection, the replacement tube must be the same type tube as specified in the Replacement Parts List.

To determine the presence of high voltage, use an accurate high impedance HV meter.

Adjust brightness, color, contrast controls to minimum.
Measure the high voltage.
The meter reading should indicate
23.5 ± 1.5KV: 14-19 inch, 26 ± 1.5KV: 19-21 inch,
29.0 ± 1.5KV: 25-29 inch, 30.0 ± 1.5KV: 32 inch
If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.

Before returning the receiver to the customer,

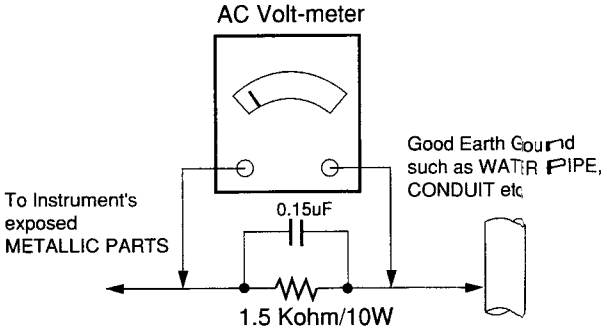
always perform an **AC leakage current check** on the exposed metallic parts of the cabinet, such as antennas, terminals, etc., to be sure the set is safe to operate without damage of electrical shock.

Leakage Current Cold Check(Antenna Cold Check)

With the instrument AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs. Place the AC switch in the on positioin, connect one lead of ohm-meter to the AC plug prongs tied together and touch other ohm-meter lead in turn to each exposed metallic parts such as antenna terminals, phone jacks, etc.
If the exposed metallic part has a return path to the chassis, the measured resistance should be between 1MΩ and 5.2MΩ.
When the exposed metal has no return path to the chassis the reading must be infinite.
An other abnormality exists that must be corrected before the receiver is returned to the customer.

Leakage Current Hot Check (See below Figure)
Plug the AC cord directly into the AC outlet.
Do not use a line Isolation Transformer during this check.
Connect 1.5K/10watt resistor in parallel with a 0.15uF capacitor between a known good earth ground (Water Pipe, Coiduit, etc.) and the exposed metallic parts.
Measure the AC voltage across the resistor using AC voltmeter with 1000 ohms/volt or more sensitivity.
Reverse plug the AC cord into the AC outlet and repeat AC voltage measurements for each esposed metallic part. Any voltage measured must not exceed 0.75 volt RMS which is corresponds to 0.5mA.
In case any measurement is out of the limits sepcified, there is possibility of shock hazard and the set must be checked and repaired before it is returned to the customer.

Leakage Current Hot Check circuit



SERVICING PRECAUTIONS

CAUTION: Before servicing receivers covered by this service manual and its supplements and addenda, read and follow the *SAFETY PRECAUTIONS* on page 3 of this publication.
NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Precautions

1. Always unplug the receiver AC power cord from the AC power source before;
   a. Removing or reinstalling any component, circuit board module or any other receiver assembly.
   b. Disconnecting or reconnecting any receiver electrical plug or other electrical connection.
   c. Connecting a test substitute in parallel with an electrolytic capacitor in the receiver.
      CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.
   d. Discharging the picture tube anode.
2. Test high voltage only by measuring it with an appropriate high voltage meter or other voltage measuring device (DVM, FETVOM, etc) equipped with a suitable high voltage probe. Do not test high voltage by "drawing an arc".
3. Discharge the picture tube anode only by (a) first connecting one end of an insulated clip lead to the degaussing or kine aquadag grounding system shield at the point where the picture tube socket ground lead is connected, and then (b) touch the other end of the insulated clip lead to the picture tube anode button, using an insulating handle to avoid personal contact with high voltage.
4. Do not spray chemicals on or near this receiver or any of its assemblies.
5. Unless specified otherwise in this service manual, clean electrical contacts only by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator; 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength)
   CAUTION: This is a flammable mixture.
   Unless specified otherwise in this service manual, lubrication of contacts in not required.
6. Do not defeat any plug/socket B+ voltage interlocks with which receivers covered by this service manual might be equipped.
7. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
8. Always connect the test receiver ground lead to the receiver chassis ground before connecting the test receiver positive lead.
   Always remove the test receiver ground lead last.
9. ***Use with this receiver only the test fixtures specified in this service manual.***
   CAUTION: Do not connect the test fixture ground strap to any heatsink in this receiver.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called *Electrostatically Sensitive (ES) Devices.* Examples of typical ES devices are integrated circuits and some fieldeffect transistors and semicounductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed to prevent potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static type solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficent to demage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a repalcement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the bruching together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range or 500° F to 600° F.
2. Use an appropriate gauge of RMA resin-core solder composed of 60 parts tin/40 parts lead.
3. Keep the soldering iron tip clean and well tinned.
4. Thorohly clean the surfaces to be soldered. Use a mall wirebristle (0.5 inch, or 1.25cm) brush with a metal handle.
   Do not use freon-propelled spray-on cleaners.
5. Use the following unsoldering technique
   a. Allow the soldering iron tip to reach normal temperature. (500° F to 600° F)
   b. Heat the component lead until the solder melts.
   c. Quickly draw the melted solder with an anti-static, suction-type solder removal device or with solder braid.
      CAUTION: Work quickly to avoid overheating the circuiboard printed foil.
6. Use the following soldering technique.
   a. Allow the soldering iron tip to reach a normal temperature (500° F to 600° F)
   b. First, hold the soldering iron tip and solder the strand against the component lead until the solder melts.

c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
CAUTION: Work quickly to avoid overheating the circuit board printed foil.
d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.

IC Remove/Replacement
Some chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in parapraphs 5 and 6 above.

Removal
1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.
2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement
1. Carefully insert the replacement IC in the circuit boare.
2. Carefully bend each IC lead against the circuit foil pad and solder it.
3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to the areas).

"Small-Signal" Discrete Transistor Removal/Replacement
1. Remove the defective transistor by clipping its leads as close as possible to the component body.
2. Bend into a "U" shape the end of each of three leads remaining on the circuit board.
3. Bend into a "U" shape the replacement transistor leads.
4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the "U" with long nose pliers to insure metal to metal contact then solder each connection.

Power Output, Transistor Device Removal/Replacement
1. Heat and remove all solder from around the transistor leads.
2. Remove the heatsink mounting screw (if so equipped).
3. Carefully remove the transistor from the heat sink of the circuit board.
4. Insert new transistor in the circuit board.
5. Solder each transistor lead, and clip off excess lead.
6. Replace heatsink.

Diode Removal/Replacement
1. Remove defective diode by clipping its leads as close as possible to diode body.
2. Bend the two remaining leads perpendicula y to the circuit board.
3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.
4. Securely crimp each connection and solder it.
5. Inspect (on the circuit board copper side) the solder joints of the two "original" leads. If they are not shiny, reheat them and if necessary, apply additional solder.

Fuse and Conventional Resistor Removal/Replacement
1. Clip each fuse or resistor lead at top of the circuit board hollow stake.
2. Securely crimp the leads of replacement component around notch at stake top.
3. Solder the connections.
CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board to prevent excessive component temperatures.

Circuit Board Foil Repair
Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board causing the foil to separate from or "lift-off" the board. The following guidelines and procedures should be followed whenever this condition is encountered.

At IC Connections
To repair a defective copper pattern at IC connections use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections).

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary).
2. carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.
3. Bend a small "U" in one end of a small gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.
4. Route the jumper wire along the path of the out-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area and clip off any excess jumper wire.

At Other Connections
Use the following technique to repair the defective copper pattern at connections other than IC Pins. This technique involoves the installation of a jumper wire on the component side of the circuit board.

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure that a hazardous condition will not exist if the jumper wire opens.
2. Trace along the copper pattern from both sides of the pattern break and locate the nearest component that is directly connected to the affected copper pattern.
3. Connect insulated 20-gauge jumper wire from the lead of the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.
CAUTION: Be sure the insulated jumper wire is dressed so the it does not touch components or sharp edges.

SPECIFICATIONS

Note : Specification and others are subject to change without notice for improvement.

- **Video input system:**
  PAL-B/G, D/K, I/I
  SECAM-B/G, D/K,L/L'
  - **Intermediate Frequency (Unit : MHz)**

  VISION IF : 38.9MHz (B/G,D/K,I/I), 33.9MHz(SECAM-L')
  COLOR IF : 34.47MHz
  (VIF-4.25000MHz / VIF-4.40625MHz): SECAM
  SOUND IF : 33.4MHz (B/G)
  32.9MHz (I/I)
  32.4MHz (D/K/L)
  40.4MHz(L')

- **Power requirement :** 230Vac(200~250Vac), 50Hz
- **Power consumption :** 75W
- **STAND-BY** :10W/2W(Option)

- **Tuning range**

Band	For TV				For CATV
	B/G	LL'	D/K	I/I	
VHF-Low	Ch2-4	B. C. C'	Ch1-5		S1'-S3', S1
VHF-High	Ch5-12	Ch5-10	Ch6-12	Ch4-13	S2-S10, S11-S20
Hyper					S21-S41
UHF	Ch21-69				

- **Tuning system :**
  FVS(Frequency Synthesizer)
  100 Programme memory
- **Antenna input impedance :** VHF/UHF 75 ohm, unbalanced
- **OSD (On Screen Display) :** WINDOW TYPE
- **Voice coil impedance :** 8 ohm
- **Sound output :** 3W+3W (Stereo)
- **External connection :** Head Phone Jack — Front
  A/V in : 1 pair
  Scart 1(Full) — Rear

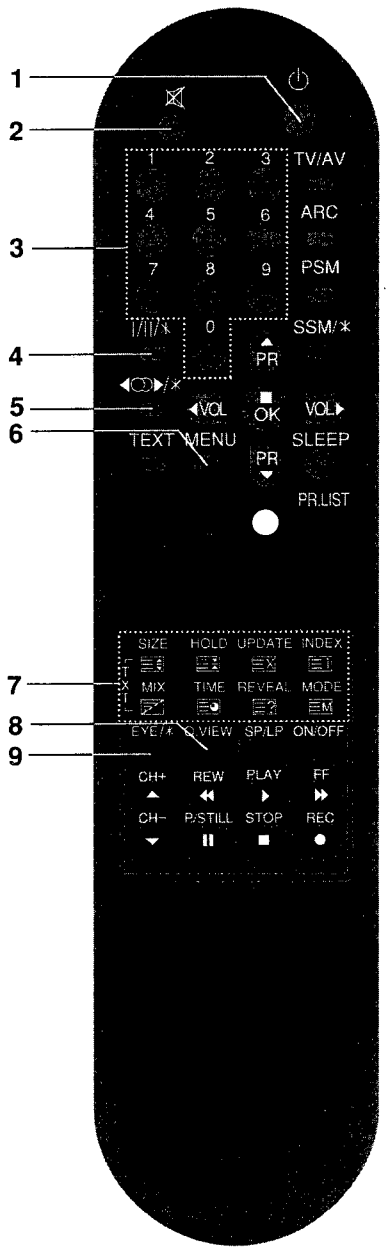
- **Feature :** Auto programme/Manual programme
  Fine Tuning
  Auto Sleep
  Programme Editing
  PSM (Picture Status Memory)
  Teletext(FLOF/LIST), TOP(option))
  4:3 ↔ 16:9 PICTURE FORMAT
  Auto Volume Level
  Zoom function
  BLUE BACK
  GAME function
  SSM(Sound Status Memory)

Child Lock : In the Lock On state the TV can only be operated by the Remote Controller.
If any button on the front panel is pressed, "Child Lock" is displayed on the screen but the button's function is not performed.
To cancel of this mode, select lock off with menu button on remote controller only.

	SCART 1	A/V JACK	Specification
Video in/out	O	O(in)	1Vp-p ±3dB, 75 ohm
Audio in	O	O	0.5Vrms±3dB, over 10Kohm
Audio out	O	X	0.5Vrms±3dB, below 1Kohm
R. G. B in	O	X	0.7Vp-p ±3dB, 75 ohm

DESCRIPTION OF CONTROLS

All the functions can be controlled with the remote control handset. Some functions can also be adjusted with the buttons on the front panel of the set.



Remote control handset

Before you use the remote control handset, please install the batteries. See the next page.

1. **POWER**
   switches the set on from standby or off to standby.

2. **MUTE**
   switches the sound on or off.

3. **NUMBER BUTTONS**
   switches the set on from standby or directly select a number.

4. **DUAL**
   selects the language during dual language broadcast.
   selects mono sound during stereo broadcast.

5. **SURROUND**
   selects surround sound.

6. **MENU**
   selects a menu.

7. **TELETEXT BUTTONS (option)**
   These buttons are used for teletext.
   For further details, see the 'Teletext' section.

8. **Q. VIEW**
   returns to the previously viewed programme.

9. **EYE (option)**
   adjusts picture according to the surrounding conditions.

10. TV/AV
selects TV or AV mode.
clears the menu from the screen.
switches the set on from standby.

11. ARC (Aspect Ratio Control)
changes the picture format.

12. PSM (Picture Status Memory)
recalls your preferred picture setting.

13. SSM/✱ (Sound Status Memory)
recalls your preferred sound setting.

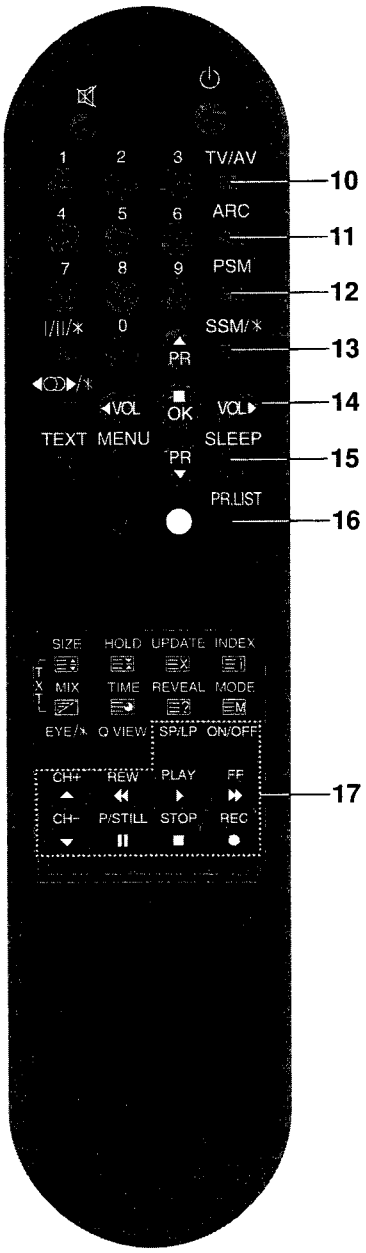
14. ▲ / ▼ (Programme Up / Down)
selects a programme or a menu item.
switches the set on from standby.
◀ / ▶ (Volume Down / Up)
adjusts the volume.
adjusts menu settings.
OK
accepts your selection or displays the current mode.

15. SLEEP
sets the sleep timer.

16. PR. LIST
displays the programme table.

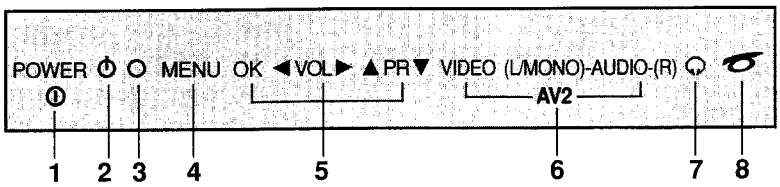
17. VCR BUTTONS
control a LG video cassette recorder.

Note : *The **PR. LIST** button is used as teletext colour button in teletext mode.*



Front panel

Shown is a simplified representation of front panel.
Here shown may be somewhat different from your set.



1. **MAIN POWER**
   switches the set on or off.

2. **POWER / STANDBY INDICATOR**
   illuminates brightly when the set is in standby mode.
   dims when the set is switched on.

3. **REMOTE CONTROL SENSOR**

4. **MENU**
   selects a menu.

5. **▲ / ▼ (Programme Up / Down)**
   selects a programme or a menu item.
   switches the set on from standby.
   ◄ / ► (Volume Down / Up)
   adjusts the volume.
   adjusts menu settings.
   OK
   accepts your selection or displays the current mode.

6. **AUDIO / VIDEO IN SOCKETS (AV2)**
   Connect the audio / video out sockets of external equipment to these sockets.

7. **HEADPHONE SOCKET**
   Connect the headphone plug to this socket.

8. **Eye (option)**
   adjusts picture according to the surrounding conditions.

DISASSEMBLY INSTRUCTIONS

Important note
This set is disconnected from the power supply through the converter transformer. An isolating transformer is necessary for service operations on the primary side of the converter transformer.

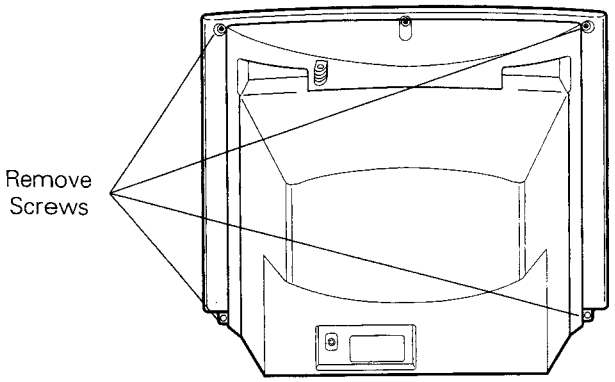
Back Cabinet Removal
Remove screws residing on the back cabinet and carefully separate the back cabinet from the front cabinet..

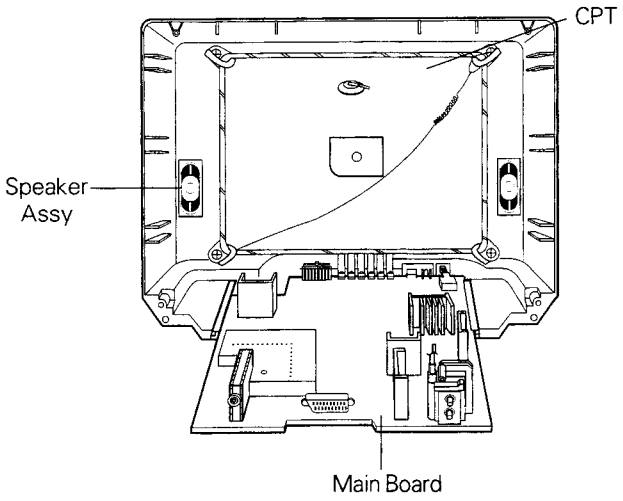
CPT Removal
1. Pull out the CPT board from the CPT neck.
2. Place the front cabinet on soft material not to mar the front surface or damage control knobs.
3. Remove 4 screws securing the picture tube mounting brackets to the front cabinet.
4. Carefully separate CPT from the front cabinet.

Chassis Assy Removal
Grasp both side of Frame and pull it backward smoothly.

Speaker Assy Removal
1. Remove P601 connector from Main Board.
2. Remove respective screws on the front cabinet.

PICTURE TUBE HANDLING CAUTION
Due to high vacuum and large surface area of picture tube, great care must be exercised when handling picture tube. Always lift picture tube by grasping it firmly around faceplate.
NEVER LIFT TUBE BY ITS NECK! The picture tube must not be scratched or subjected to excessive pressure as fracture of glass may result in an implosion of considerable violence which can cause personal injury or property damage.





ADJUSTMENT

□ Safety Precautions

1. It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances. But this is changeable in view of productivity.
5. Unless otherwise noted, set the line voltage to 230Vac± 10%, 50/60Hz.

□ Test Equipment required

1. Multimeter (volt meter)
2. Oscilloscope

● RF AGC (Automatic Gain Control) Adjustment

Test Point	**: AGC TP (J05)**
Adjust	**: Remote Control**

The RF AGC was aligned at the time of manufacture for optimum performance over a wide range conditions. Readjustment of RF AGC should not be necessary unless unusual local conditions exist, such as ;

1) Channel interference in a CATV system.
2) Picture bending and/or color beats, which are unusually due to excessive RF signal input when the receiver is too close to a transmitting tower or when the receiver is connected to an antenna distribution system where the RF signal has been amplified. In this case, the input signal should be attenuated (with pad or filter) to a satisfactory level.
3) Picture noise caused by "broadcast noise" or weak signal. If the broadcast is "clean" and the RF signal is at least 1mV (60dBu), the picture will be noise free in any area.

Adjusting RF AGC to one end of rotation will usually cause a relatively poor signal to noise ratio;
Adjusting to the other end of rotation will usually cause a degradation of over load capabilities resulting in color beats or adjacent channel interference.

Adjustment

1. Connect RF signal (65dB±0.2dB) and turn on the TV.
   ※ Standard adjustment Channel
   - EU 05 Ch. (f_{rf} = 175.25MHz) : CK, CL
   - EU 41 Ch. (f_{rf} = 631.25MHz) : CI
2. Press OK buttons on TV set and Remote Controller at the same time to get into SVC-0 mode.
3. Press Channel UP/DOWN button on the Remote Controller several times to find AGC??.
4. Press Volume UP/DOWN button until the AGC Voltage is the same as the Table below.
5. Press OK(■) button to memorize the data.

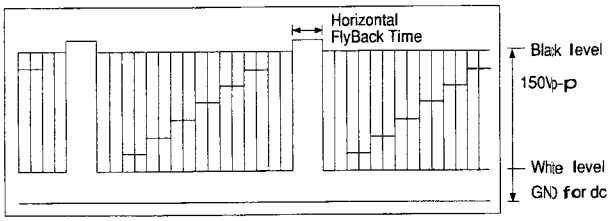
Model	CK-	CL-
System	PAL/SECAM-B/G,D/K	PAL/SECAM-B/G,LL'
Tuner P/N	6700VPF005B	6700VPF005A
Marker	LGEC	LGEC
AGC Voltage	2.3± 0.1V	2.3± 0.1V

Model	CI-
System	PAL-I/I
Tuner P/N	6700VPF005B
Marker	LGEC
AGC Voltage	2.1± 0.1V

● Screen Voltage Adjustment

Test Point	**: RK (Red Cathode of CPT Board)**
Adjust	**: Screen Control of FBT**

1) Press TV/AV Key to get AV Mode.
2) Connect the probe of oscilloscope to the RK (Red Cathode) of CPT Board.
3) Adjust Screen Volume of FBT so that the waveform is the same as below figure.



The waveform of AV Mode

● Focus Adjustment

NOTE: This adjustment should be performed after warming up for 10 minutes.

Test Point	**: Observing Display**
Adjust	**: Focus control of FBT**

1) Tune the TV set to receive an inactive channel station.
2) Adjust the Focus control of FBT for best overall focus.

● Deflection Data Adjustment (Line SVC-1)

NOTE: To enter SVC mode, press "OK" buttons on both TV set and the Remote control at the same time.

1. Preparation for Deflection Adjustment

1) At SVC mode, press the Yellow colored button.
   If the Remote Controller doesn't have the Yellow button, you should use a Service Remote Control (105-201G) and press SVC button.
   And then, deflection data adjustment OSD (SVC1 mode) will be displayed.
2) Press Channel UP/DOWN button for desirous function Adjustment.
3) Press Volume UP/DOWN button to adjust the data.

2. Deflection Adjustment Procedure

1) Vertical Adjustment
Slect VS and adjust until the mechanical center of CPT and that of screen coincides and select VA and adjust to coincide the inner circle of screen with outer frame of CPT.

2) Horizontal Adjustment
Select HS and adjust until the mechanical center of CPT and that of screen coincides.

3) Vertical S Correction Adjustment
Select SC and adjust until top-bottom side pincushion are equal.

4) Press OK(■) button to memorize the data.

3. Deflection Initial Setup Data

Status	Default	21" SEB	20" SEB
VL	38	38	38
VS	23	23	19
VA	40	40	36
HS	30	30	32
SC	11	11	11

● White Balance Adjustment.(LINE SVC-0)

NOTE : This adjustment should be performed after screen voltage adjustment.

1) Tune the TV set to receive an 100% white pattern.
2) Press OK(■) buttons on TV set and remote controller at the same time to get into SVC mode.
3) Press PSM(RED) button on remote controller. (Standard picture)
4) Press Channel UP/DOWN button for desirous function adjustment.
5) Adjust VOL+ or VOL- button for GG031.
6) Adjust VOL+ or VOL-button in each status of "Rg--"/"Bg--" for X=293±8, Y=295±8 with color analyzer.
7) Press OK(■) button to memorize the adjustment data.

Status	Adjustment	Range	Initial Data	Remark
RG	R-Drive	0~63	28	
GG	G-Drive	0~63	31	
BG	B-Drive	0~63	25	

● LINE SVC-2 Adjustment

ITEM	Data
FP(FM Mono Sound Prescale)	33
NP(NICAM Prescale)	124
SP(Scart Audio Input Prescale, AV1)	30
S VOL(FM Scart1 Output Prescale)	67
M VOL(MAX Volume, HOTEL Option)	31

● OPTION Adjustment (SVC MODE:OPTION-1, OPTION-2)

NOTE: When the EEPROM has been replaced, the Option data should be restored as the function of individual system and specification.

1) Press OK buttons on both TV set and Remote Controller at the same time to get into SVC mode.
2) Press the Yellow button several times to find OPTION-1 or OPTION-2.
3) Input the correspond OPTION data referring to Table below with the numeric buttons 0~9.

Table 1. OPTION 1 Function

Option	Code	Function	Remark
SYSTEM	00	B+L (BG+LL')	CL-Model
	01	B+D (BG+DK)	CK-Model
	11	II	CI-Model
HOTEL	0	W/O HOTEL	for BUYER'S request
	1	For HOTEL	
ACMS	0	ACMS Off	
	1	ACMS On	
TOP	0	TOP Off	
	1	TOP On	
AV 2	0	AV 2 Off	
	1	AV 2 On	

Table 2. Specifications for OPTION-1 data

OPTION Data	SYSTEM	HOTEL	ACMS	TOP	AV 2
0	00	0	0	0	0
1	00	0	0	0	1
2	00	0	0	1	0
3	00	0	0	1	1
4	00	0	1	0	0
5	00	0	1	0	1
6	00	0	1	1	0
7	00	0	1	1	1
8	00	1	0	0	0
9	00	1	0	0	1
10	00	1	0	1	0
11	00	1	0	1	1
12	00	1	1	0	0
13	00	1	1	0	1
14	00	1	1	1	0
15	00	1	1	1	1
16	01	0	0	0	0
17	01	0	0	0	1
18	01	0	0	1	0
19	01	0	0	1	1

OPTION Data	SYSTEM	SCART	EYE	UBB	AV2
20	01	0	1	0	0
21	01	0	1	0	1
22	01	0	1	1	0
23	01	0	1	1	1
24	01	1	0	0	0
25	01	1	0	0	1
26	01	1	0	1	0
27	01	1	0	1	1
28	01	1	1	0	0
29	01	1	1	0	1
30	01	1	1	1	0
31	01	1	1	1	1
32	10	0	0	0	0
33	10	0	0	0	1
34	10	0	0	1	0
35	10	0	0	1	1
36	10	0	1	0	0
37	10	0	1	0	1
38	10	0	1	1	0
39	10	0	1	1	1
40	10	1	0	0	0
41	10	1	0	0	1
42	10	1	0	1	0
43	10	1	0	1	1
44	10	1	1	0	0
45	10	1	1	0	1
46	10	1	1	1	0
47	10	1	1	1	1
48	11	0	0	0	0
49	11	0	0	0	1
50	11	0	0	1	0
51	11	0	0	1	1
52	11	0	1	0	0
53	11	0	1	0	1
54	11	0	1	1	0
55	11	0	1	1	1
56	11	1	0	0	0
57	11	1	0	0	1
58	11	1	0	1	0
59	11	1	0	1	1
60	11	1	1	0	0
61	11	1	1	0	1
62	11	1	1	1	0
63	11	1	1	1	1

Table 3. OPTION 2 Function

Option	Code	Function	Remark
Language	0	OSD Lang. (14)	
	1	OSD Lang. (5)	
D/K NICAM	0	D/K NICAM Off	STEREO Option
	1	D/K NICAM System	
GAME	0	W/O GAME	
	1	With GAME function	
EYE	0	EYE Off	
	1	EYE On	
TUNER1	0	LGEC TUNER	
	1	PHILIPS TUNER	

Table 4. Specifications for OPTION-2 data

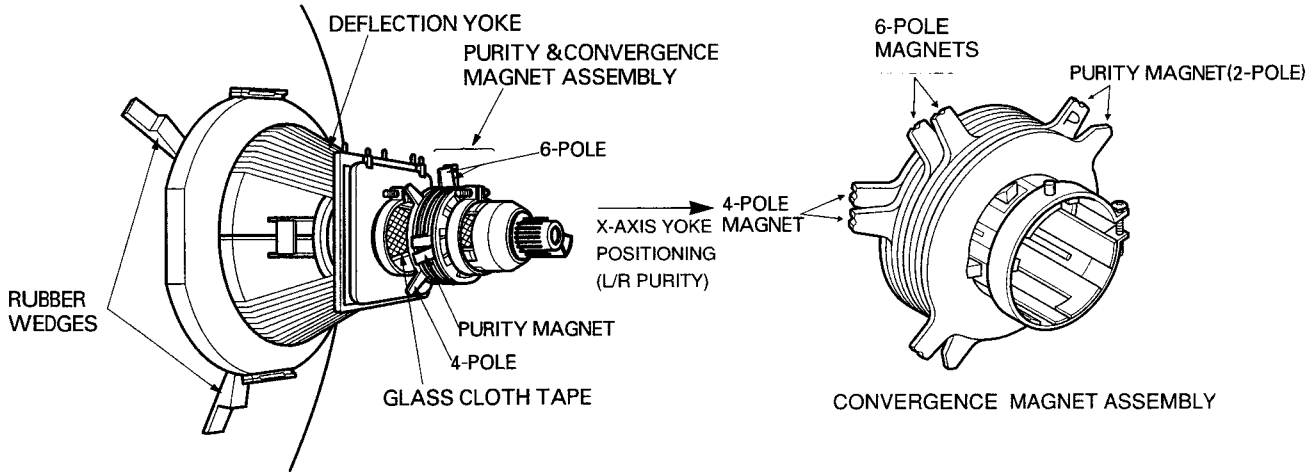
OPTION Data	Lang.	D/K NICAM	GAME	EYE	TUNER1
0	0	0	0	0	0
1	0	0	0	0	1
2	0	0	0	1	0
3	0	0	0	1	1
4	0	0	1	0	0
5	0	0	1	0	1
6	0	0	1	1	0
7	0	0	1	1	1
8	0	1	0	0	0
9	0	1	0	0	1
10	0	1	0	1	0
11	0	1	0	1	1
12	0	1	1	0	0
13	0	1	1	0	1
14	0	1	1	1	0
15	0	1	1	1	1
16	1	0	0	0	0
17	1	0	0	0	1
18	1	0	0	1	0
19	1	0	0	1	1
20	1	0	1	0	0
21	1	0	1	0	1
22	1	0	1	1	0
23	1	0	1	1	1
24	1	1	0	0	0
25	1	1	0	0	1
26	1	1	0	1	0
27	1	1	0	1	1
28	1	1	1	0	0
29	1	1	1	0	1
30	1	1	1	1	0
31	1	1	1	1	1

PURITY & CONVERGENCE ADJUSTMENT

Caution:
Convergence and Purity have been factory aligned. Do not attempt to tamper with these alignments.
However, the effects of adjacent receiver components, or replacement of picture tube or deflection yoke may require the need to readjust purity any convergence.

5. Reconnect the internal degaussing coil.

6. Position the beam bender locking rings at the 9 o'clock position and the other three pairs of tabs (2,4 and 6 pole magnets) at the 12 o'clock position.



● Purity Adjustment

This procedure DOES NOT apply to bonded yoke and picture tube assemblies.
The instrument should be at room temperature (60 degrees F or above) for six (6) hours and be operating at low beam current (dark background) for approximately 20 to 30 minutes before performing purity adjustments.

CAUTION: Do not remove any trim magnets that may be attached to the bell of the picture tube.

1. Remove the AC power and disconnect the internal degaussing coil.

2. Remove the yoke from the neck of the picture tube.

3. If the yoke has the tape version beam bender, remove it and replace it with a adjustable type beam bender (follow the instructions provided with the new beam bender)

4. Replace the yoke on the picture tube neck, temporarily remove the three (3) rubber wedges from the bell of the picture tube and then slide the yoke completely forward.

7. Perform the following steps, in the order given, to prepare the receiver for the purity adjustment procedure.

   a. Face the receiver in the "magnetic north" direction.

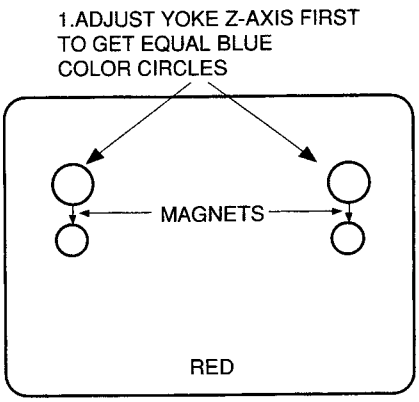
   b. Externally degauss the receiver screen with the television power turned off.

   c. Turn the television on for approximately 10 seconds to perform internal degaussing and then turn the TV off.

   d. Unplug the internal degaussing coil. This allows the thermistor to cool down while you are performing the purity adjustment. DO NOT MOVE THE RECEIVER FROM ITS "MAGNETIC NORTH" POSITION.

   e. Turn the receiver on and obtain a red raster by increasing the red bias control (CW) and decreasing the bias controls for the remaining two colors (CCW).

   f. Attach two round magnets on the picture tube screen at 3 o'clock and 9 o'clock positions, approximately one (1) inch from the edge of the mask (use double-sided tape).



8. Referring to above, perform the following two steps:
   a. Adjust the yoke Z-axis to obtain equal blue circles.
   b. Adjust the appropriate beam bender tabs to obtain correct purity (four equal circles).

9. After correct purity is set, tighten the yoke clamp screw and remove the two screen magnets.

10. Remove the AC power and rotate the receiver 180 degrees (facing "magnetic south").

11. Reconnect the internal degaussing coil.

12. Turn the receiver on for 10 seconds (make sure the receiver came on) to perform internal degaussing, and then turn the receiver off.

13. Unplug the internal degaussing coil.

14. Turn on the receiver and check the purity by holding one (1) round magnet at the 3 o'clock and a second round magnet at 9 o'clock position. If purity is not satisfactory, repeat steps 8 through 14.

15. Turn off the receiver and reconnect the internal degaussing coil.

● Convergence Adjustment

Caution: This procedure DOES NOT apply to bonded yoke and picture tube assemblies.
Do not use screen magnets during this adjustment procedure. Use of screen magnets will cause an incorrect display.

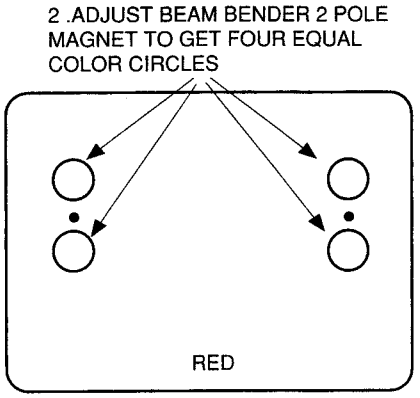
1. Remove AC power and disconnect the internal degaussing coil.

2. Apply AC Power and set the brightness to the Picture Reset condition. Set the Color control to minimum.

3. Make a horizontal line.

4. Adjust the Red, Green and Blue Bias controls to get a dim white line.

5. Restore the screen by removing the horizontal line.



6. Reconnect the internal degaussing coil and apply AC power.

7. Turn the receiver on for 10 seconds to perform internal degaussing and then turn the receiver off again.

8. Unplug the internal degaussing-coil.

9. Turn on the receiver, connect a signal generator to the VHF antenna terminal and apply a crosshatch signal.

Caution: During the convergence adjustment procedure, be very careful not to disturb the purity adjustment tabs are accidentally move, purity should be confirmed before proceeding with the convergence adjustments.

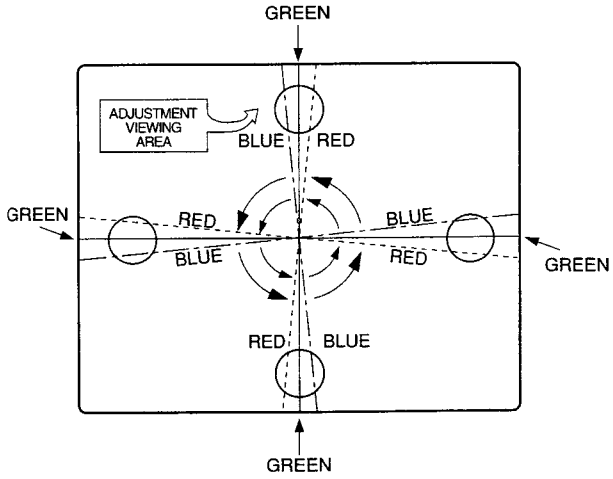
Note: Make sure the focus is set correctly on this instrument before proceeding with the following adjustment.

10. Converge the red and blue vertical lines to the green vertical line at the center of the screen by performing the following steps (below TABLE).
    a. Carefully rotate both tabs of the 4-pole ring magnet simultaneously in opposite directions from the 12 o'clock position to converge the red and blue vertical lines.
    b. Carefully rotate both tabs of the 6-pole ring magnet simultaneously in opposite directions form the 12 o'clock position to converge the red and blue (now purple) vertical lines with the green vertical line.

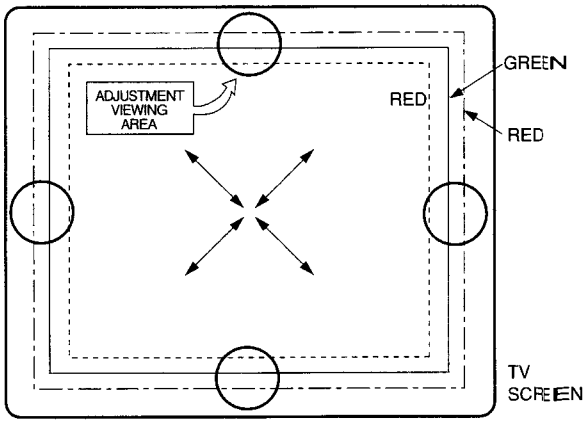
11. Converge the red and blue horizontal with the green line at the center of the screen by performing the following steps. (below TABLE)
    a. Carefully rotate both tabs of the 4-pole ring magnet simultaneously in the same direction (keep the spacing between the two tabs the same) to converge the red and blue horizontal lines.
    b. Carefully rotate both tabs of the 6-pole ring magnet simultaneously in same direction (keep the spacing between the two tabs the same) to converge the red and blue (now purple) horizontal lines with the green horizontal line.
    c. Secure the tabs previsouly adjusted by locking them in place with the locking tabs on the beam bender.

RING PAIRS	ROTATION DIRECTION OF BOTH TABS	MOVEMENT OF RED AND BLUE BEAMS
4 POLE	OPPOSITE	B OR B, R OR R
	SAME	B R OR B R
6 POLE	OPPOSITE	B OR B, R OR R
	SAME	B R OR B R

UP/DOWN ROCKING OF THE YOKE CAUSES OPPOSITE ROTATION OF RED AND BLUE RASTERS

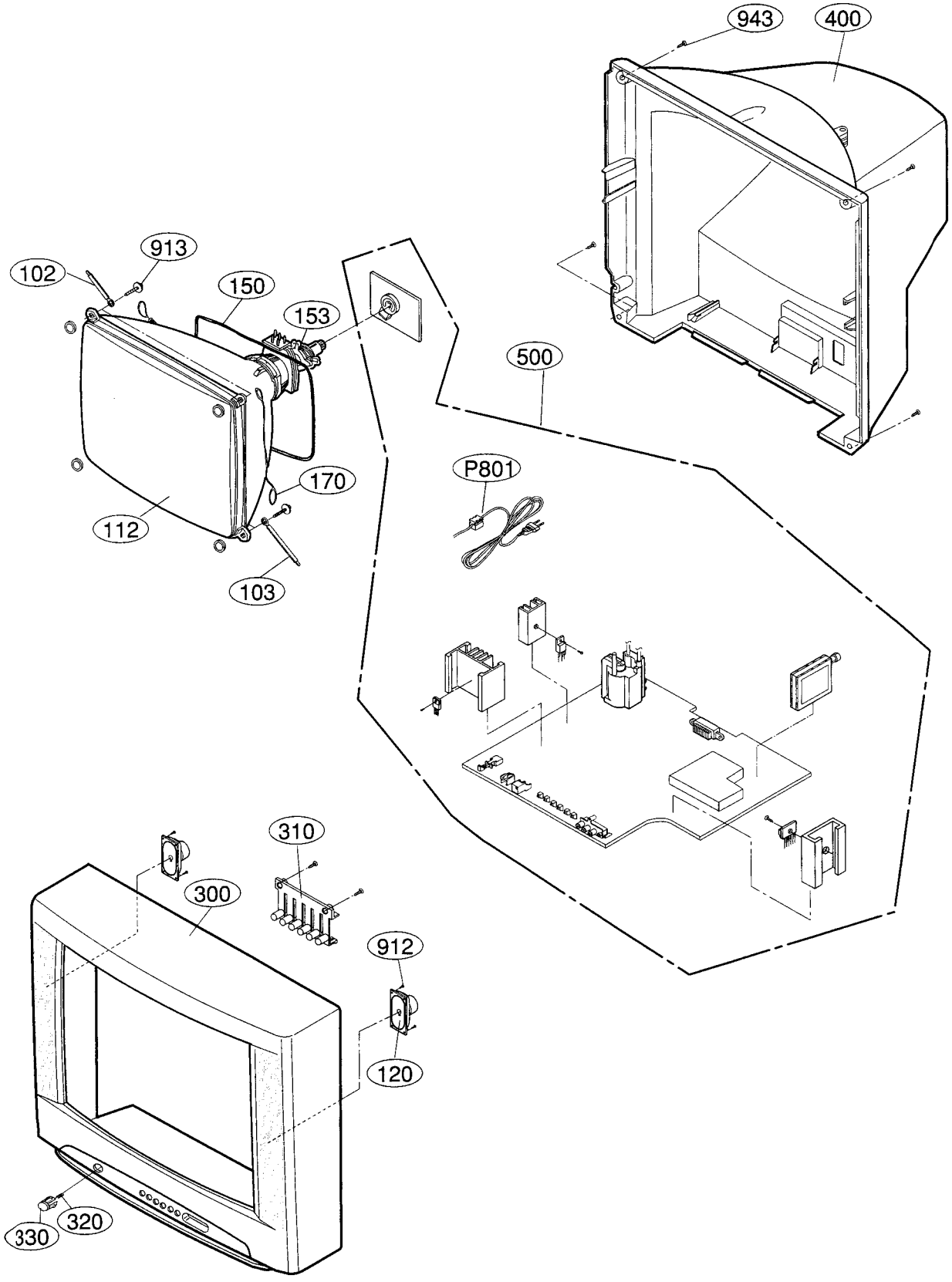


LEFT/RIGHT ROCKING OF THE YOKE CAUSES OPPOSITE SIZE CHANGE OF THE RED AND BLUE RASTERS



12. While watching the 6 o'clock positions on the screen, rock the front of the yoke in a vertical (up/down) direction to converge the red and blue vertical lines. (Fig upper left)
13. Temporarily place a rubber wedge at the 12 o'clock position to hold the vertical position or the yoke.
14. Check the 3 o'clock and 9 o'clock areas to confirm that the red and blue horizontal lines are converged.
    If the lines are not converged, slightly offset the vertical tilt of the yoke (move the rubber wedge if necessary) to equally balance the convergence error of the horizontal lines at 3 o'clock and 9 o'clock and the vertical lines at 6 o'clock and 12 o'clock.
15. Place a 1.5 inch piece of glass tape over the rubber foot at the rear of the 12 o'clock wedge.
16. While watching the 6 o'clock and 12 o'clock areas of the screen, rock the front of the yoke in the horizontal (left to right) motion to converge the red and blue horizontal lines. (Fig. upper right)
17. Temporarily place a rubber wedge at the 5 o'clock and 7 o'clock positions to hold the horizontal position of the yoke.
18. Check the 3 o'clock and 9 o'clock areas to confirm that the red and blue vertical lines are converged. If the lines are not converged, slightly offset the horizontal tilt of the yoke (move the temporary rubber wedges if necessary) to equally balance the convergence error of the horizontal lines at 6 o'clock and 12 o'clock and the vertical lines at 3 o'clock and 9 o'clock.
19. Using a round magnet confirm purity at the center, right and left sides and corners. See Purity Adjustment Procedure.
20. Reconfirm convergence and apply a 1.5 inch piece of glass tape over the rubber foot at the rear of the 5 o'clock and the 7 o'clock wedges.

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

LOCA. NO	PART NO		DESCRIPTIONS
	20"	21"	
102	341-721E	341-721E	HOLDER,D-COIL(FOR SAFA,L=65)
103	341-721F	341-721F	HOLDER,D-COIL(FOR SAFA,L=130)
⚠ 112	2055-V1221B	6341V21002B	CPT,A48QAD220X 03N7ND(+0.4)
120	120-C93G	120-C93G	SPEAKER,C091P06K1459 8OHM 5/
⚠ 150	150-D02M	150-D02N	COIL,DEGAUSSING,CU 20" 60T 15OHM
⚠ 153	153-276A	153-110F	DY,DCAM1-20PLAA 20"
⚠ 170	170-A01	170-A01KJ	CPT EARTH 20"
300	3106V00038J	3106V00027M	CABINET UNIT 20"
310	5020V00070B	5020V00070B	BUTTON,CONTROL
320	320-070G	320-070G	SPRING,COIL
330	5020V00071B	5020V00071B	BUTTON,POWER
400	3809V00028J	3809V00028J	BACK COVER ASSY
500	3141VMN388B	3141VMN388C	CHASSIS ASSY,MAIN[6,07,04] 20LG CPT
912	1PRF0302816	1PRF0302816	SCREW,BRAIZER D3 L12
913	332-057B	332-057B	SCREW ASSY,HEXAGON HEAD
943	1PTF0403116	1PTF0403116	SCREW,TRUSS HEAD D4 L16
⚠ P801	174-009P	174-009P	CORD,POWER(W/HOLD,HOUSING,L=220,4.0

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

REPLACEMENT PARTS LIST

LOCA. NO	PART NO	DESCRIPTION
IC		
IC01	0ISO899104A	LG8991-04A
IC02	0IAL241600B	IC,AT24C16-10PC 8D EEPROM 16K
IC03	0ISS754200A	IC,KA7542Z RESET TO92 TP 4.2V
IC301	0IPH835150A	IC,TDA8351/N5 9P,SIP BK V/OUT(W/O
IC501	0IPH884212A	IC,TDA8842(S1)/N2 56P,SDIP BK MUL
IC601	0IPH261600A	IC,TDA2616 STEREO AMP(20+20W)
IC602	0IIT341000H	IC,MSP3410D 52P,SDIP BK B4-VERSIO
IC603	0ISS753300A	IC,KA7533Z RESET T0-92 TP 3.3V
IC604	0ITF447000A	IC,TDA4470M 28P,SDIP BK VIF+SIF
IC605	0IKE780500K	IC,KIA7805PI 3P(TO-220IS) 5V,1A
IC701	0IPH528100F	IC,SAA5281ZP/E 52P,SDIP BK WEST
IC801	0ISK570700A	IC,STR/S5707(LF,953) 9P SMPS-CNTR
⚠ IC802	0ISH123200B	IC,PC123 FY2PHOTO COUPLER
IC803	0ISS780500J	IC,KA78L05AZ TO-92 TP 5V REGULATO
IC804	0ISS780800H	IC,KA78R08 4P,TO-220F BK LOW DROP
IC805	0IKE780500K	IC,KIA7805PI 3P(TO-220IS) 5V,1A
IC901	0IPH610700A	IC,TDA6107Q SIP9 BK VIDEO OUT AMP
DIODE		
⚠ DB801	0DD260000BD	DIODE,BRIDGE D2SBA60
D101	0DD414809ED	DIODE,DS4148
D111	0DD859009AA	DIODE,SILICON MA859 TAPING
D112	0DD859009AA	DIODE,SILICON MA859 TAPING
D301	0DD414809ED	DIODE,DS4148
D402	0DD150009CA	DIODE,RGP15J
D403	0DD414809ED	DIODE,DS4148
D501	0DD414809ED	DIODE,DS4148
D502	0DD414809ED	DIODE,DS4148
D503	0DD414809ED	DIODE,DS4148
D504	0DD414809ED	DIODE,DS4148
D505	0DD414809ED	DIODE,DS4148
D506	0DD414809ED	DIODE,DS4148
D509	0DD859009AA	DIODE,SILICON MA859 TAPING
D510	0DD859009AA	DIODE,SILICON MA859 TAPING
D601	0DD181009AB	DIODE,SWITCHING KDS181 85V 300MA
D602	0DD181009AB	DIODE,SWITCHING KDS181 85V 300MA
D603	0DD414809ED	DIODE,DS4148
D604	0DD414809ED	DIODE,DS4148
D701	0DD414809ED	DIODE,DS4148
D702	0DD414809ED	DIODE,DS4148
D703	0DD414809ED	DIODE,DS4148
D704	0DD414809ED	DIODE,DS4148
D741	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D742	0DD200009AH	DIODE,RU2AMV
D743	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D744	0DD414809ED	DIODE,DS4148
D802	0DD100009AM	DIODE,EU1ZV
D803	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D804	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D805	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D806	0DD100009AM	DIODE,EU1ZV

LOCA. NO	PART NO	DESCRIPTION
D821	0DD300009AC	DIODE,RU3AMV
D823	0DD420000BB	DIODE,D4L20U
⚠ D824	0DD420000BB	DIODE,D4L20U
D827	0DD060009AC	DIODE,TVR06J 0.6A/600V 250NS
D901	0DD400309AD	DIODE,IN4003A RECT
D902	0DR210009AA	DIODE,RECTIFIER BAV21 DO-35 200V
D903	0DR210009AA	DIODE,RECTIFIER BAV21 DO-35 200V
D904	0DR210009AA	DIODE,RECTIFIER BAV21 DO-35 200V
ZD01	0DZ560009CF	DIODE,ZENER MTZJ5.6B ROHM-K
ZD101	0DZ560009CF	DIODE,ZENER MTZJ5.6B ROHM-K
ZD102	0DZ330009DF	DIODE,ZENER MTZJ33B ROHM-K
ZD231	0DZ120009AF	DIODE,ZENER MTZJ12B ROHM-K
ZD501	0DZ180009AG	DIODE,ZENER MTZJ18B ROHM-K
ZD741	0DZ820009AH	DIODE,ZENER MTZJ8.2B ROHM-K
ZD742	0DZ820009AH	DIODE,ZENER MTZJ8.2B ROHM-K
ZD801	0DZ680009BB	DIODE,ZENER MTZJ6.8B ROHM-K
ZD904	0DZ750009AG	DIODE,ZENER MTZJ7.5B ROHM-K
TRANSISTOR		
Q01	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q02	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q04	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q101	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q103	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q111	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q112	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q113	0TR388109AA	TR,KTC3881 CHIP KEC
Q114	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q115	0TR102009AG	TR,CHIP KRC102S SOT-23 TP KEC
Q231	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q401	0TR320709AA	TR,KTC3207,TP(KTC2482),KEC
Q402	0TR249900AA	TR,KTD2499 TO-3P(H)IS TOSHIBA
Q501	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q502	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q503	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q505	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q51	0TR945009AA	TR,KSC945C-Y,TP,SS
Q510	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q512	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q601	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q602	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q631	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q632	0TR150400BA	TR,CHIP 2SA1504S(ASY) KEC
Q701	0TR387500AA	TR,CHIP 2SC3875S(ALY) KEC
Q801	0TR102709AA	TR,KTC1027-Y TP(KTC2235),KEC
Q802	0TR120209AD	TR,KSR1202 TP SAMSUNG TO92S
Q804	0TR945009AA	TR,KSC945C-Y,TP,SS
Q805	0TR320209AA	TR,KTC3202-TP-Y (KTC1959)KEC
CAPACITOR		
C02	0CE475DK618	C,ELECTROLYTIC 4.7UF STD 50V M
C08	0CE225DK618	C,ELECTROLYTIC 2.2UF STD 50V M
C09	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M

LOCA. NO	PART NO	DESCRIPTION
C101	0CE475DK618	C,ELECTROLYTIC 4.7UF STD 50V M
C104	0CE226DF618	C,ELECTROLYTIC 22UF STD 16V M
C105	0CE476DK618	C,ELECTROLYTIC 47UF STD 50V M
C106	0CN1040K949	C,TUBULA(HIGH DIELE) 0.1M 50V Z
C108	0CE107DH618	C,ELECTROLYTIC 100UF STD 25V M
C11	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C114	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C116	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C117	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C12	0CE335DK618	C,ELECTROLYTIC 3.3UF STD 50V M
C20	0CE107DF618	C,ELECTROLYTIC 100UF STD 16V M
C233	0CE227DF618	C,ELECTROLYTIC 220UF STD 16V M
C250	0CN4710K519	C,TUBULA(HIGH DIELE) 470PF 50V K
C251	0CN4710K519	C,TUBULA(HIGH DIELE) 470PF 50V K
C254	0CN4710K519	C,TUBULA(HIGH DIELE) 470PF 50V K
C256	0CN4710K519	C,TUBULA(HIGH DIELE) 470PF 50V K
C301	0CN1010K519	C,TUBULA(HIGH DIELE) 100PF 50V K
C302	0CN1040K949	C,TUBULA(HIGH DIELE) 0.1M 50V Z
C303	0CE226DN618	C,ELECTROLYTIC 22UF STD 100V M
C304	0CE476DN618	C,ELECTROLYTIC 47UF STD 100V M
C305	0CQ3321N509	C,POLYESTER(MYLAR) 0.0033U 100V K
C306	0CQ1041N509	C,POLYESTER(MYLAR) 0.1MF 100V L
C307	0CQ1531N509	C,POLYESTER(MYLAR) 0.015MF 100V K
C308	0CQ1031N509	C,POLYESTER(MYLAR) 0.01U 100V K
C401	181-013E	C,MPP 200V 0.47uF J
"(21")	181-013D	C,MPP 200V 0.43uF J
C403	0CK1020W515	C,CERAMIC(HIGH DIELE) 1000PF 500V K
C405	181-015P	C,MPP 1600V 0.0075UF H
C406	0CN3310K519	C,TUBULA(HIGH DIELE) 330P 50V K
C407	0CE225DP618	C,ELECTROLYTIC 2.2UF STD 160V M
C409	0CE105DP618	C,ELECTROLYTIC 1UF STD 160V M
C410	0CE105DP618	C,ELECTROLYTIC 1UF STD 160V M
C501	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C502	0CE106DH618	C,ELECTROLYTIC 10UF STD 25V M
C504	0CQ1041N509	C,POLYESTER(MYLAR) 0.1MF 100V L
C507	0CE225DK618	C,ELECTROLYTIC 2.2UF STD 50V M
C510	0CE107DF618	C,ELECTROLYTIC 100UF STD 16V M
C513	0CQ1042K439	C,POLYESTER(MYLAR) 0.1UF S 50V J
C514	0CQ1042K439	C,POLYESTER(MYLAR) 0.1UF S 50V J
C516	0CN2230H949	C,TUBULA(HIGH DIELE) 22000P 25V Z F
C517	0CN2230H949	C,TUBULA(HIGH DIELE) 22000P 25V Z F
C518	0CN2230H949	C,TUBULA(HIGH DIELE) 22000P 25V Z F
C521	0CC2710K415	C,CERAMIC(TEMP COMP) 270P 50V J
C522	0CC2710K415	C,CERAMIC(TEMP COMP) 270P 50V J
C523	0CC6200K415	C,CERAMIC(TEMP COMP) 62PF 50V J
C524	0CQ4731N509	C,POLYESTER(MYLAR) 0.047U 100V K
C526	0CE227DF618	C,ELECTROLYTIC 220UF STD 16V M
C530	0CE225DK618	C,ELECTROLYTIC 2.2UF STD 50V M
C531	0CE104DK618	C,ELECTROLYTIC 0.1UF STD 50V M
C533	0CE105DK618	C,ELECTROLYTIC 1UF STD 50V M
C538	0CQ1041N455	C,POLYESTER(MYLAR) 0.1000UF 100V J
C539	0CSZVTA001G	C,TANTALUM 2.2UF 25V K

LOCA. NO	PART NO	DESCRIPTION
C543	0CE106DH618	C,ELECTROLYTIC 10UF STD 25V M
C544	0CQ3342K439	C,POLYESTER(MYLAR) 0.33UF S 50V J
C545	0CE224DK618	C,ELECTROLYTIC 0.22UF STD 50V M
C548	0CE684DK618	C,ELECTROLYTIC 0.68UF STD 50V M
C601	0CE225DK618	C,ELECTROLYTIC 2.2UF STD 50V M
C602	0CE476DH618	C,ELECTROLYTIC 47UF STD 25V M
C608	0CE225DK618	C,ELECTROLYTIC 2.2UF STD 50V M
C610	0CE108DJ618	C,ELECTROLYTIC 1000UF STD 35V M
C612	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C614	0CE477DH618	C,ELECTROLYTIC 470UF STD 25V M
C615	0CE477DH618	C,ELECTROLYTIC 470UF STD 25V M
C617	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C626	0CE227DF618	C,ELECTROLYTIC 220UF STD 16V M
C627	0CE335DK618	C,ELECTROLYTIC 3.3UF STD 50V M
C632	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C633	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C636	0CE474DK618	C,ELECTROLYTIC 0.47UF STD 50V M
C637	0CE474DK618	C,ELECTROLYTIC 0.47UF STD 50V M
C638	0CE107DF618	C,ELECTROLYTIC 100UF STD 16VM
C640	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C653	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C656	0CE107DF618	C,ELECTROLYTIC 100UF STD 16VM
C663	0CE227DF618	C,ELECTROLYTIC 220UF STD 16VM
C664	0CQ3342K439	C,POLYESTER(MYLAR) 0.33UF S 50V J
C675	0CN1030F679	C,TUBULA(HIGH DIELE) 0.01MF 16V M
C677	0CE226DF618	C,ELECTROLYTIC 22UF STD 16V M
C678	0CQ4742K439	C,POLYESTER(MYLAR) 0.47UF S 50V J
C687	0CE106DF618	C,ELECTROLYTIC 10UF STD 16V M
C692	0CE107DF618	C,ELECTROLYTIC 100UF STD 16VM
C698	0CX4700K409	C,TUBULA(T.C) 47PF 50V J
C699	0CX4700K409	C,TUBULA(T.C) 47PF 50V J
C703	0CE107DD618	C,ELECTROLYTIC 100UF STD 10VM
C705	0CX8R20K509	C,TUBULA(T.C) 8.2P 50V K
C707	0CQ1042K439	C,POLYESTER(MYLAR) 0.1UF S 50VJ
C708	0CQ1042K439	C,POLYESTER(MYLAR) 0.1UF S 50VJ
C709	0CQ3342K439	C,POLYESTER(MYLAR) 0.33UF S 50V J
C711	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C712	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C714	0CE107DF618	C,ELECTROLYTIC 100UF STD 16VM
C743	0CK4710W515	C,CERAMIC(HIGH DIELE) 470PF 500V K
C744	0CE106DR618	C,ELECTROLYTIC 10UF STD 250VM
C745	0CK4710W515	C,CERAMIC(HIGH DIELE) 470PF 500V K
C746	0CE337BH618	C,ELECTROLYTIC 330UF KME 25VM
C747	0CK4710W515	C,CERAMIC(HIGH DIELE) 470PF 500V K
C748	0CE476DN618	C,ELECTROLYTIC 47UF STD 100VM
C749	181-009V	C,PP 200V 0.047UF K
C751	0CQ1031N509	C,POLYESTER(MYLAR) 0.01U 100V K
C801	0CK10201515	C,CERAMIC(HIGH DIELE) 1000P 1KV
C802	0CK10201515	C,CERAMIC(HIGH DIELE) 1000P 1KV
C803	0CK10201515	C,CERAMIC(HIGH DIELE) 1000P 1KV
C804	0CK10201515	C,CERAMIC(HIGH DIELE) 1000P 1KV
C805	181-001E	CAPACITOR CE 400V 120UF M

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LOCA. NO	PART NO	DESCRIPTION
C806	0CE107DH618	C,ELECTROLYTIC 100UF STD 25V M
C807	0CE106BN618	C,ELECTROLYTIC 10UF KME 100V M
C808	0CN1020K519	C,TUBULA(HIGH DIELE) 1000PF 50V K
C809	0CE107DH618	C,ELECTROLYTIC 100UF STD 25V M
C81	0CE476DF618	C,ELECTROLYTIC 47UF STD 16V M
C810	0CE227DF618	C,ELECTROLYTIC 220UF STD 16V M
C811	181-120K	C,ACT 4KV E 222M TP10
⚠ C812	181-120K	C,ACT 4KV E 222M TP10
C813	181-033M	CAPACITOR 2KV B 471K TP5
C814	0CE108DH618	C,ELECTROLYTIC 1000UF STD 25V M
C820	0CE477BJ618	C,ELECTROLYTIC 470UF KME (RG) 35V
C822	0CK47101515	C,CERAMIC(HIGH DIELE) 470P 1KV K
⚠ C823	181-091Q	CAPACITOR 1KV R 471K TP5
C824	0CE108DH618	C,ELECTROLYTIC 1000UF STD 25V M
C826	181-091Q	CAPACITOR 1KV R 471K TP5
C827	0CE227DP61A	C,ELECTROLYTIC 220UF STD 160V M
C829	0CE1071P61A	C,ELECTROLYTIC 100UF SM 160V M
C832	0CE227DF618	C,ELECTROLYTIC 220UF STD 16V M
C837	0CE227DF618	C,ELECTROLYTIC 220UF STD 16V M
C843	0CE477DH618	C,ELECTROLYTIC 470UF STD 25V M
C844	0CE227DF618	C,ELECTROLYTIC 220UF STD 16V M
⚠ C853	0CQZVBK002D	C,POLYESTER A.C 275V 0.47UF K
C904	0CQZVBK002A	C,POLYESTER A.C 275V 0.1UF M
C905	0CE106DR618	C,ELECTROLYTIC 10UF STD 250V M
C906	0CE2261R618	C,ELECTROLYTIC 22M SM 250V M
C907	181-033S	CAPACITOR 2KV B 122K TP7.5

COIL & TRANSFORMER

L01	0LA0102K119	INDUCTOR,10UH K
L02	0LA0122K119	INDUCTOR,12UH K
L03	0LA0102K119	INDUCTOR,10UH K
L101	150-C01G	COIL,CHOKE 1.0UH A 1105
L102	0LA0102K139	INDUCTOR,10UH K
L103	0LA0102K119	INDUCTOR,10UH K
L111	150-C01A	COIL,CHOKE 0.29UH A 1105
L115	0LA0102K119	INDUCTOR,10UH K
L116	0LA0102K119	INDUCTOR,10UH K
L241	0LA1000K119	INDUCTOR,100UH K
L243	0LA1000K119	INDUCTOR,100UH K
L250	0LA1000K119	INDUCTOR,100UH K
L251	0LA1000K119	INDUCTOR,100UH K
L253	0LA0102K119	INDUCTOR,10UH K
L254	0LA0102K119	INDUCTOR,10UH K
L290	0LA1000K119	INDUCTOR,100UH K
L291	0LA1000K119	INDUCTOR,100UH K
L301	0LA0102K139	INDUCTOR,10UH K
L302	0LA0102K139	INDUCTOR,10UH K
L402	150-L02C	COIL,H-LINEARITY 170UH
L501	0LA0331K119	INDUCTOR,3.3UH K
L502	0LA0102K119	INDUCTOR,10UH K
L503	0LA0821K119	INDUCTOR,8.2UH K
L504	0LA0102K139	INDUCTOR,10UH K

LOCA. NO	PART NO	DESCRIPTION
L505	0LA0331K119	INDUCTOR,3.3UH K
L510	0LA0102K139	INDUCTOR,10UH K
L511	0LA0561K119	INDUCTOR,5.6UH K
L512	0LA0561K119	INDUCTOR,5.6UH K
L513	0LA0561K119	INDUCTOR,5.6UH K
L514	0LA0102K119	INDUCTOR,10UH K
L515	0LA0102K119	INDUCTOR,10UH K
L631	0LA0102K119	INDUCTOR,10UH K
L632	0LA0102K119	INDUCTOR,10UH K
L633	0LA1000K119	INDUCTOR,100UH K
L691	150-E16C	COIL,VAR,07S 1B 38.9MHZ
L693	0LA0102K119	INDUCTOR,10UH K
L701	0LA0331K119	INDUCTOR,3.3UH K
L702	0LA0102K119	INDUCTOR,10UH K
L742	0LA0221K139	INDUCTOR,2.2UH A +-10%
L821	150-C02F	COIL,CHOKE 82UH R1217
L822	150-C02F	COIL,CHOKE 82UH R1217
L851	150-F06N	COIL,LINE FILTER SQE2424 7MH
L901	150-C02A	COIL,CHOKE 10UH R0814
⚠ T401	151-C02H	TRANSFORMER,H-DRIVE,EI-19,BULK
⚠ T801	6170VMFA06J	TRANSFORMER,SMPS EER4215 1150UH

CORE

L257	125-123A	CORE,FERRITE BFD3565R2F
L258	125-022K	CORE,FERRITE 1UH
L292	125-123A	CORE,FERRITE BFD3565R2F
L506	125-022K	CORE,FERRITE 1UH
L507	125-123A	CORE,FERRITE BFD3565R2F
L509	125-022K	CORE,FERRITE 1UH
L801	125-123A	CORE,FERRITE BFD3565R2F
L803	125-022K	CORE,FERRITE 1UH
L804	125-123A	CORE,FERRITE BFD3565R2F
L805	125-022K	CORE,FERRITE 1UH
L823	125-123A	CORE,FERRITE BFD3565R2F
L824	125-123A	CORE,FERRITE BFD3565R2F

RESISTOR

⚠ FR704	180-D02E	R,RNF RND(S) CR 2W 1.0 J
⚠ FR741	0RF0101H609	R,FUSIBLE 1.0 1/2W 5
⚠ FR742	0RF0470J607	R,FUSIBLE 0.47 1W 5%
⚠ FR743	0RF0470J607	R,FUSIBLE 0.47 1W 5%
⚠ FR823	0RF0470J607	R,FUSIBLE 0.47 1W 5%
⚠ FR824	0RF0470H609	R,FUSIBLE 0.47 1/2W 5
⚠ FR901	180-D02G	R,RNF RND(S) CR 2W 1.2 J
R01	0RD1000F609	R,CARBON FILM 100 1/6W 5
R03	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R08	0RD4701F609	R,CARBON FILM 4.7K 1/6W 5
R101	0RD1202F609	R,CARBON FILM 12K 1/6W 5
R104	0RD1000F609	R,CARBON FILM 100 1/6W 5
R105	0RD1000F609	R,CARBON FILM 100 1/6W 5
R106	0RD4702F609	R,CARBON FILM 47K 1/6W 5
R110	0RD4702F609	R,CARBON FILM 47K 1/6W 5

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Replace only with part number specified.

LOCA. NO	PART NO	DESCRIPTION
R114	0RD2201F609	R,CARBON FILM 2.2K 1/6W 5
R116	0RD4702F609	R,CARBON FILM 47K 1/6W 5
R120	0RD1000F609	R,CARBON FILM 100 1/6W 5
R121	0RD0102F609	R,CARBON FILM 10 1/6W 5
R15	0RD1601F609	R,CARBON FILM 1.6K 1/6W 5
R17	0RD4702F609	R,CARBON FILM 47K 1/6W 5
R20	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R22	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R23	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R24	0RD1000F609	R,CARBON FILM 100 1/6W 5
R241	0RD1000F609	R,CARBON FILM 100 1/6W 5
R244	0RD1800F609	R,CARBON FILM 180 1/6W 5
R25	0RD1000F609	R,CARBON FILM 100 1/6W 5
R257	0RD1000F609	R,CARBON FILM 100 1/6W 5
R26	0RD1000F609	R,CARBON FILM 100 1/6W 5
R27	0RD1000F609	R,CARBON FILM 100 1/6W 5
R28	0RD1000F609	R,CARBON FILM 100 1/6W 5
R29	0RD1000F609	R,CARBON FILM 100 1/6W 5
R290	0RD2200H609	R,CARBON FILM 220 1/2W 5
R291	0RD2200H609	R,CARBON FILM 220 1/2W 5
R301	0RN2001F409	R,METAL FILM 2K 1/6W 1%
R302	0RD3303F609	R,CARBON FILM 330K 1/6W 5
R304	0RN0680J607	R,METAL FILM OXIDE 0.68 1W 5% TA62
R305	0RD0222F609	R,CARBON FILM 22 1/6W 5
R306	0RS2200J607	R,METAL FILM OXIDE 220 1W 5%
R307	0RN4701F409	R,METAL FILM 4.7K 1/6W 1%
"(21")	0RN1802F409	R,METAL FILM 18K 1/6W 1%
R31	0RD2701F609	R,CARBON FILM 2.7K 1/6W 5
R37	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R401	0RN0151H609	R,METAL FILM 1.5 1/2W 5
R402	0RS1002K607	R,METAL FILM OXIDE 10K 2W 5%
R403	0RD0912F609	R,CARBON FILM 91 1/6W 5
R404	0RD4700F609	R,CARBON FILM 470 1/6W 5
R405	0RS3301J607	R,METAL FILM OXIDE 3.30K 1W 5%
R406	0RD0392H609	R,CARBON FILM 39 1/2W 5
R427	180-B01U	R,CEMENT RS RECT S 5W 4.7K J
R48	0RD1000F609	R,CARBON FILM 100 1/6W 5
R503	0RD0472F609	R,CARBON FILM 47 1/6W 5
R508	0RD0472F609	R,CARBON FILM 47 1/6W 5
R511	0RD1800F609	R,CARBON FILM 180 1/6W 5
R512	0RD3300F609	R,CARBON FILM 330 1/6W 5
R521	0RD2200F609	R,CARBON FILM 220 1/6W 5
R522	0RD2200F609	R,CARBON FILM 220 1/6W 5
R525	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R529	0RD1000F609	R,CARBON FILM 100 1/6W 5
R530	0RD1000F609	R,CARBON FILM 100 1/6W 5
R532	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R533	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R534	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R537	0RD1003F609	R,CARBON FILM 100K 1/6W 5
R550	0RD2702F609	R,CARBON FILM 27K 1/6W 5
R555	0RN3902F409	R, METAL FILM 39K 1/6W 1%

LOCA. NO	PART NO	DESCRIPTION
R557	0RD5100F609	R,CARBON FILM 510 1/6W 5
R601	0RD2402F609	R,CARBON FILM 24K 1/6W 5
R609	0RD2402F609	R,CARBON FILM 24K 1/6W 5
R630	0RD1000F609	R,CARBON FILM 100 1/6W 5
R631	0RD1000F609	R,CARBON FILM 100 1/6W 5
R634	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R635	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R69	0RD3300F609	R,CARBON FILM 330 1/6W 5
R698	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R71	0RD1000F609	R,CARBON FILM 100 1/6W 5
R711	0RD3001F609	R,CARBON FILM 3.0K 1/6W 5
R72	0RD1000F609	R,CARBON FILM 100 1/6W 5
R745	0RD0222H609	R,CARBON FILM 22 1/2W 5
R746	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R747	0RS8201H609	R,METAL FILM OXIDE 8.2K 1/2W 5
R748	0RD5601F609	R,CARBON FILM 5.6K 1/6W 5
R749	0RD2203H609	R,CARBON FILM 220K 1/2W 5
R750	0RD4701H609	R,CARBON FILM 4.7K 1/2W 5
R752	0RD1201H609	R,CARBON FILM 1.2K 1/2W 5
R80	0RD1000F609	R,CARBON FILM 100 1/6W 5
R801	0RS2202K607	R,METAL FILM OXIDE 22K 2W 5%
R802	0RS2202K607	R,METAL FILM OXIDE 22K 2W 5%
R803	0RD3902H609	R,CARBON FILM 39K 1/2W 5
R804	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R805	0RD1601F609	R,CARBON FILM 1.6K 1/6W 5
R806	0RS0472J607	R,METAL FILM OXIDE 47 1W 5%
R807	0RN0121H609	R,METAL FILM OXIDE 1.2 1/2W 5 TA52
R808	180-A01J	R,RW ROUND G 2W 0.43 J
⚠ R809	180-C02H	R,CARBON COMPOSIT RC 1/2W 8.2M K
R81	0RD1000F609	R,CARBON FILM 100 1/6W 5
R810	0RD1202H609	R,CARBON FILM 12K 1/2W 5
R812	0RS0272H609	R,METAL FILM OXIDE 27 1/2W 5
R82	0RD1000F609	R,CARBON FILM 100 1/6W 5
R820	0RD1301H609	R,CARBON FILM 1.3K 1/2W 5 TA52
R822	0RD1002F609	R,CARBON FILM 10K 1/6W 5
R824	0RD4701F609	R,CARBON FILM 4.7K 1/6W 5
R825	0RD4701F609	R,CARBON FILM 4.7K 1/6W 5
R828	0RS0331J607	R,METAL FILM OXIDE 3.30 1W 5%
R829	0RD1001F609	R,CARBON FILM 1.0K 1/6W 5
R84	0RD1000F609	R,CARBON FILM 100 1/6W 5
R844	0RS0472H609	R,METAL FILM OXIDE 47 1/2W 5
R851	180-A03C	R,RW RECT G 7W 2.20 J
R901	0RD2200F609	R,CARBON FILM 220 1/6W 5
R902	0RD2200F609	R,CARBON FILM 220 1/6W 5
R903	0RD2200F609	R,CARBON FILM 220 1/6W 5
R907	0RS1501H609	R,METAL FILM OXIDE 1.5K 1/2W 5
R908	0RS1501H609	R,METAL FILM OXIDE 1.5K 1/2W 5
R909	0RS1501H609	R,METAL FILM OXIDE 1.5K 1/2W 5
R911	0RD2204H609	R,CARBON FILM 2.2M 1/2W 5
R913	0RD1000F609	R,CARBON FILM 100 1/6W 5

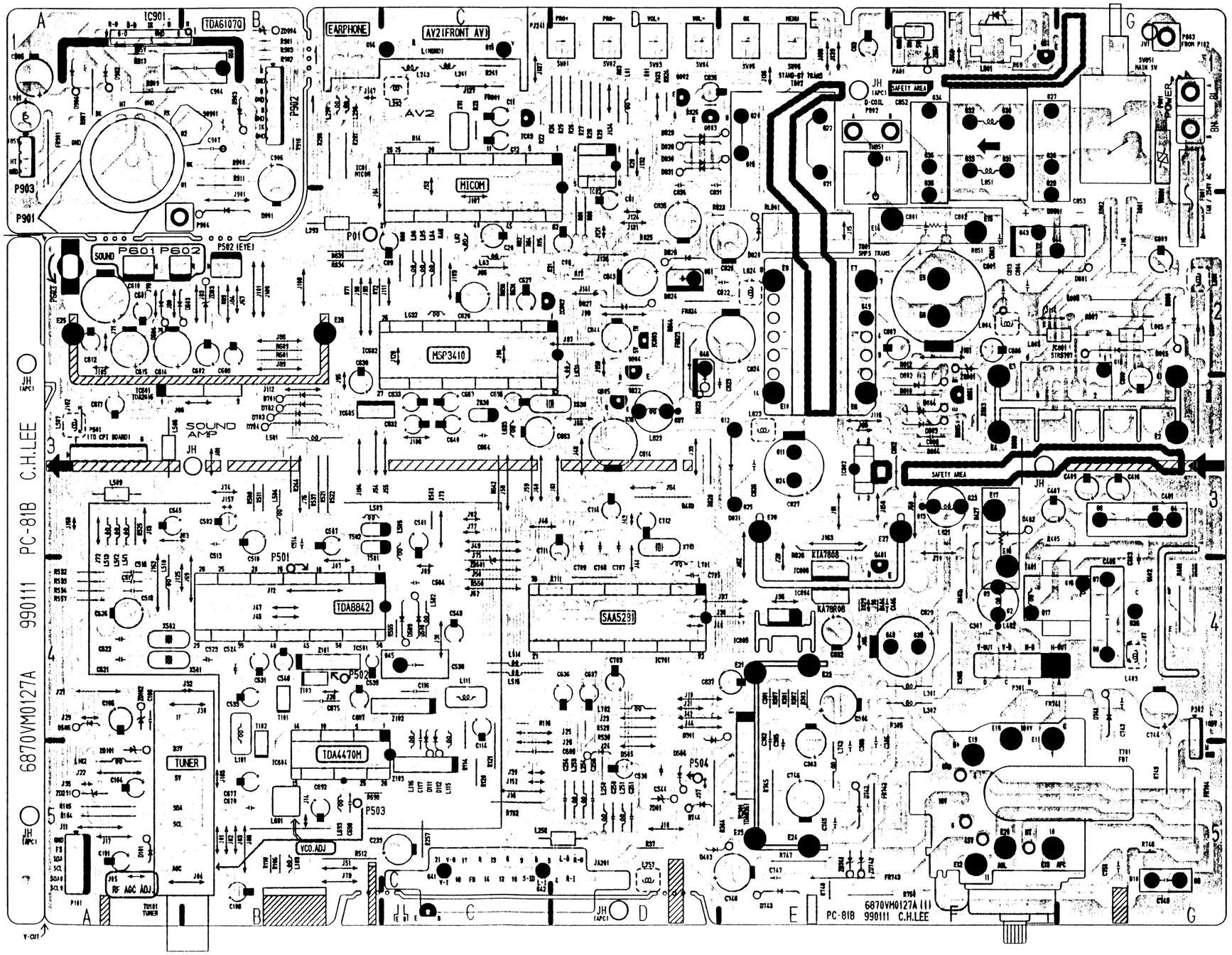
SWITCH

The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.

LOCA. NO	PART NO	DESCRIPTION
SW01	140-315A	SWITCH,TACT VERT
SW02	140-315A	SWITCH,TACT VERT
SW03	140-315A	SWITCH,TACT VERT
SW04	140-315A	SWITCH,TACT VERT
SW05	140-315A	SWITCH,TACT VERT
SW06	140-315A	SWITCH,TACT VERT
⚠ SW851	6600VM2002A	SWITCH,PUSH SDKEA3 4A/128A250V 6.
CRYSTAL & FILTER		
T101	166-C06D	FILTER(CIRC),TRAP MKT40.4MA110P-TF01
T102	166-C06D	FILTER(CIRC),TRAP MKT40.4MA110P-TF01
T501	166-C02E	FILTER,TRAP TPS6.5MB-TF21
T502	166-C02C	FILTER,TRAP TPS5.5MB-TF21
X501	156-A01V	CRYSTAL,4.433619 SER.PF 80 OHM BULK
X502	156-A01C	CRYSTAL,3.579545 90 OHM
X630	156-A02M	CRYSTAL,18.432000 10PF 20 OHM BULK
X701	156-A02X	CRYSTAL,STD RADIAL 27.0MHZ 25PPM 20P
Z101	166-A01B	FILTER,0FWK3953M
Z102	6200VQS001D	FILTER(CIRC),SAW OFWK9260M 38.9MHZ SIF
Z103	166-A01U	FILTER (CIRC),SAW OFWL9454M
Z630	166-F01D	FILTER,EMI,DS306-93 Y5S 271M 50V TA
ACCESSORIES		
A1	3828VA0178J	MANUAL,OWNERS FS GS FR 009L 335A/016B
A2	6710V00009L	REMOTE CONTROLLER
MISCELLANEOUS		
	303-F62A	COVER,TUNER
	351-008A	LINK,POWER S/W
⚠ F801	131-098B	FUSE,4A/250V HBC TIME DELAY 5X20
JA201	381-091A	SOCKET,SCART JACK 21PIN
JA241	6613V00006A	JACK ASSY,3P+EAR(PJ6062A)
LD01	4930V00048A	HOLDER,DIODE LED ASSY
PA01	106-047G	PRE-AMP,SBX2020-82 SONY 38.0KHZ MESH
⚠ P901	6620VBC001A	SOCKET,CPT 29.1 PHI SINGLE(PCS629-03A)
SG901	165-004A	SPARK GAP AG20PT 152F-L3N/S-23
⚠ TH851	163-054F	THERMISTOR,PTC J502P84D140M290Q 220V
TU101	6700VPF005A	TUNER,TU8PSD01DB DIN BG/L 3
⚠ T701	6174Z-8005E	FBT,FTSPN13-T8005E 20"
"	6174Z-8005A	FBT,FTSPN13-T8005A 21"
VD801	164-003D	VARISTOR,SVC 561D-14A
X01	166-E05C	RESONATOR,RESO,CST8.00MTW-TF01

PRINTED CIRCUIT BOARD

MAIN & CPT



COMPONENT

C01	F1	C534	B4	C707	D3	F801B	
C02	E1	C535	B4	C708	D3	FR601	
C03	D1	C536	B4	C709	D3	FR704	
C04	C1	C537	C4	C710	D4	FR741	
C05	D2	C538	C4	C711	D3	FR742	
C06	C2	C539	C4	C712	D3	FR743	
C07	C2	C540	B4	C713	D4	FR823	
C08	D2	C541	C4	C714	D3	FR824	
C09	C2	C542	A3	C743	G4	FR901	
C10	C1	C543	C4	C744	G4	IC01	
C11	C1	C544	D5	C745	E5	IC02	
C12	C1	C545	A3	C746	E5	IC03	
C13	C1	C548	B4	C747	E5	IC301	
C14	C1	C549	A3	C748	E5	IC501	
C17	C2	C550	A3	C749	G5	IC601	
C18	C2	C551	A3	C751	G5	IC602	
C19	C2	C601	A2	C801	F2	IC603	
C20	C2	C602	B2	C802	F2	IC604	
C22	D2	C603	B3	C803	F2	IC605	
C80	D2	C604	A3	C804	F2	IC701	
C81	D2	C605	A2	C805	F2	IC801	
C101	A5	C606	A3	C806	F2	IC802	
C103	A5	C607	A3	C807	F2	IC803	
C104	A5	C608	B2	C808	F3	IC804	
C105	A4	C609	B3	C809	G2	IC805	
C106	A4	C610	A2	C810	G3	IC901	
C107	C4	C611	A2	C811	G2	JA201	
C108	B5	C612	A2	C812	F3	L01	
C110	C5	C614	A2	C813	F2	L02	
C113	C4	C615	A2	C814	D3	L03	
C114	C4	C617	A3	C820	E2	L04	
C115	C4	C618	A2	C822	E2	L05	
C116	C4	C619	B2	C823	E3	L06	
C117	C5	C625	C2	C824	E2	L101	
C118	C5	C626	C2	C826	E3	L102	
C233	C5	C627	C2	C827	E3	L103	
C240	C1	C628	C2	C829	F4	L111	
C241	C1	C629	C3	C831	E2	L115	
C242	C1	C630	C2	C832	E4	L116	
C243	C1	C631	C2	C834	D2	L241	
C244	C1	C632	C3	C835	D2	L243	
C250	D5	C633	C3	C836	E1	L250	
C251	D5	C634	B3	C837	E4	L251	
C254	D5	C635	C3	C843	D2	L253	
C256	D5	C636	D4	C844	D2	L254	
C257	D5	C637	D4	C852	F1	L257	
C258	D5	C638	C3	C853	G1	L258	
C290	B1	C639	C3	C904	A1	L290	
C291	B1	C640	C3	C905	A1	L291	
C292	B1	C641	C3	C906	B2	L292	
C293	C1	C642	C2	C907	B1	L293	
C301	E4	C643	C2	D101	A5	L301	
C302	E4	C644	C2	D111	C5	L302	
C303	E4	C645	C2	D112	C5	L402	
C304	E4	C646	D2	D301	E4	L403	
C305	E5	C647	D2	D402	F3	L501	
C306	E5	C648	C2	D403	E5	L502	
C307	F4	C649	C2	D501	A3	L503	
C308	E4	C650	C3	D502	B2	L504	
C309	E4	C651	C3	D503	B3	L505	
C310	E4	C652	C3	D504	D5	L506	
C312	E5	C653	C3	D505	D5	L507	
C401	G3	C654	C3	D506	A4	L509	
C403	G4	C655	C3	D509	C4	L510	
C405	G4	C656	C3	D510	C4	L511	
C406	F4	C657	C3	D601	A3	L512	
C407	G3	C658	C3	D602	A3	L513	
C409	G3	C659	C3	D603	B2	L514	
C410	G3	C660	D3	D604	A2	L515	
C501	C4	C661	D3	D701	B3	L631	
C502	B3	C662	D3	D702	B3	L632	
C503	C4	C663	D3	D703	B3	L633	
C504	C4	C664	C3	D704	B3	L691	
C505	B4	C665	C3	D741	G4	L693	
C506	B4	C674	B4	D742	E5	L701	
C507	B3	C675	B4	D743	E5	L702	
C508	B4	C676	B5	D744	D5	L742	
C509	B4	C677	B5	D801	G2	L801	
C510	B3	C678	B5	D802	F3	L803	
C511	B4	C679	B5	D803	F3	L804	
C513	B3	C681	B5	D804	F3	L805	
C514	B3	C682	B5	D805	G2	L821	
C516	A4	C683	B4	D806	G2	L822	
C517	A4	C684	B5	D820	E2	L823	
C518	A4	C685	B5	D821	E3	L824	
C519	B4	C686	B4	D823	D3	L851	
C521	A4	C687	C4	D824	D2	L901	
C522	A4	C688	C4	D826	D2	LD01	
C523	B4	C690	B4	D827	D2	P101	
C524	B4	C692	B5	D828	D1	P302	
C525	B4	C696	B5	D829	E1	P501	
C526	A4	C697	C5	D830	E1	P502	
C527	B4	C698	B5	D831	D1	P601	
C528	B4	C699	C5	D901	B2	P602	
C529	B4	C702	D4	D902	A1	P803	
C530	D5	C703	D4	D903	B1	P901	
C531	B4	C704	D4	D904	A1	P902	
C532	B4	C705	E4	DB801	F2	P903	
C533	B4	C706	D3	F801A	G2	P904	

COMPONENT LOCATION GUIDE

.....F1	C534 .....B4	C707 .....D3	F801B G1	P301A G4	R108 .....B5	R632 .....C2	TP3 .....A1	TP102 .....D4
.....E1	C535 .....B4	C708 .....D3	FR601 .....C1	P301B F4	R109 .....B5	R633 .....D2	TP4 .....A1	TP103 .....D4
.....D1	C536 .....B4	C709 .....D3	FR704 .....G5	P301C F4	R110 .....B5	R634 .....B2	TP5 .....A1	TP104 .....D4
.....C1	C537 .....C4	C710 .....D4	FR741 .....F4	P301D F4	R112 .....C5	R635 .....B2	TP6 .....B1	TP105 .....D4
.....D2	C538 .....C4	C711 .....D3	FR742 .....E5	P801A G1	R113 .....C5	R636 .....C3	TP7 .....C1	TP106 .....D4
.....C2	C539 .....C4	C712 .....D3	FR743 .....E5	P801B G1	R114 .....C5	R637 .....C3	TP8 .....C1	TP107 .....D4
.....C2	C540 .....B4	C713 .....D4	FR823 .....D3	P802A E1	R115 .....C4	R638 .....B3	TP9 .....C1	TP108 .....D4
.....D2	C541 .....C4	C714 .....D3	FR824 .....D2	P802B F1	R116 .....D4	R639 .....B3	TP10 .....C1	TP109 .....D4
.....C2	C542 .....A3	C743 .....G4	FR901 .....A1	PA01 .....F1	R117 .....C4	R640 .....C3	TP11 .....C1	TP110 .....D4
.....C1	C543 .....C4	C744 .....G4	IC01 .....D1	PJ241 .....C1	R118 .....C4	R641 .....C3	TP12 .....D2	TP111 .....D4
.....C1	C544 .....D5	C745 .....E5	IC02 .....D1	Q01 .....D2	R119 .....C4	R642 .....C3	TP13 .....D2	TP112 .....D4
.....C1	C545 .....A3	C746 .....E5	IC03 .....C1	Q02 .....D2	R120 .....C5	R686 .....B5	TP14 .....D2	TP113 .....D4
.....C1	C548 .....B4	C747 .....E5	IC301 .....E5	Q04 .....C2	R121 .....C5	R687 .....B5	TP15 .....C2	TP114 .....D4
.....C1	C549 .....A3	C748 .....E5	IC501 .....C4	Q51 .....G1	R122 .....C4	R688 .....B5	TP16 .....C2	TP115 .....D4
.....C2	C550 .....A3	C749 .....G5	IC601 .....B3	Q101 .....B5	R123 .....C4	R691 .....B4	TP17 .....C2	TP116 .....D4
.....C2	C551 .....A3	C751 .....G5	IC602 .....D2	Q103 .....B5	R124 .....C4	R692 .....B5	TP18 .....C2	TP117 .....D4
.....C2	C601 .....A2	C801 .....F2	IC603 .....D2	Q111 .....C4	R126 .....C4	R693 .....B5	TP19 .....C2	TP118 .....D4
.....C2	C602 .....B2	C802 .....F2	IC604 .....C4	Q112 .....C5	R218 .....C5	R696 .....C5	TP20 .....C2	TP119 .....D4
.....D2	C603 .....B3	C803 .....F2	IC605 .....C3	Q113 .....C4	R230 .....A5	R697 .....C5	TP21 .....C2	TP120 .....D4
.....D2	C604 .....A3	C804 .....F2	IC701 .....D4	Q114 .....B5	R231 .....C5	R698 .....C5	TP22 .....C2	TP121 .....D4
.....D2	C605 .....A2	C805 .....F2	IC801 .....G3	Q115 .....B5	R232 .....C5	R699 .....C5	TP23 .....C2	TP122 .....D4
.....A5	C606 .....A3	C806 .....F2	IC802 .....E3	Q231 .....A5	R233 .....C5	R702 .....D4	TP24 .....C2	TP123 .....D4
.....A5	C607 .....A3	C807 .....F2	IC803 .....D2	Q401 .....F4	R234 .....C5	R703 .....D4	TP25 .....C2	TP124 .....C3
.....A4	C608 .....B2	C808 .....F3	IC804 .....E4	Q402 .....G4	R235 .....C5	R704 .....D4	TP26 .....C2	TP125 .....B3
.....A4	C609 .....B3	C809 .....G2	IC805 .....E4	Q501 .....C3	R240 .....C1	R706 .....D3	TP27 .....C2	TP126 .....B4
.....C4	C610 .....A2	C810 .....G3	IC901 .....A1	Q502 .....C5	R241 .....C1	R707 .....D3	TP28 .....C2	TP127 .....B4
.....B5	C611 .....A2	C811 .....G2	JA201 .....C5	Q503 .....B3	R244 .....B3	R709 .....D3	TP29 .....D2	TP128 .....B4
.....C5	C612 .....A2	C812 .....F3	L01 .....D1	Q505 .....B3	R251 .....D5	R711 .....D4	TP30 .....D2	TP129 .....B4
.....C4	C614 .....A2	C813 .....F2	L02 .....C2	Q510 .....D5	R252 .....D5	R712 .....D4	TP31 .....D2	TP130 .....B4
.....C4	C615 .....A2	C814 .....D3	L03 .....C2	Q512 .....B3	R253 .....A5	R713 .....D3	TP32 .....D2	TP131 .....B4
.....C4	C617 .....A3	C820 .....E2	L04 .....C2	Q601 .....A3	R257 .....C5	R715 .....D4	TP33 .....D2	TP132 .....C4
.....C4	C618 .....A2	C822 .....E2	L05 .....C2	Q602 .....A3	R290 .....B2	R716 .....D4	TP34 .....D2	TP133 .....C4
.....C4	C619 .....B2	C823 .....E3	L06 .....C2	Q631 .....C3	R291 .....B2	R717 .....D3	TP35 .....D2	TP134 .....C4
.....C5	C625 .....C2	C824 .....E2	L101 .....B4	Q632 .....B3	R301 .....E4	R718 .....D3	TP36 .....C2	TP135 .....C4
.....C5	C626 .....C2	C826 .....E3	L102 .....A5	Q701 .....D3	R302 .....E4	R719 .....D3	TP37 .....C2	TP136 .....C4
.....C5	C627 .....C2	C827 .....E3	L103 .....B5	Q801 .....F3	R303 .....E4	R720 .....D3	TP38 .....C2	TP137 .....B4
.....C1	C628 .....C2	C829 .....F4	L111 .....C4	Q802 .....D1	R304 .....E5	R745 .....E5	TP39 .....C2	TP138 .....B4
.....C1	C629 .....C3	C831 .....E2	L115 .....C5	Q803 .....D1	R305 .....F4	R746 .....G5	TP40 .....C2	TP139 .....B4
.....C1	C630 .....C2	C832 .....E4	L116 .....C5	Q804 .....D3	R306 .....F4	R747 .....E5	TP41 .....C2	TP140 .....B4
.....C1	C631 .....C2	C834 .....D2	L241 .....C1	Q805 .....D3	R307 .....E4	R748 .....E5	TP42 .....C2	TP141 .....B4
.....C1	C632 .....C3	C835 .....D2	L243 .....C1	R01 .....D1	R401 .....G4	R749 .....G5	TP43 .....C2	TP142 .....B4
.....D5	C633 .....C3	C836 .....E1	L250 .....D5	R02 .....C2	R402 .....F4	R750 .....E5	TP44 .....C2	TP143 .....B4
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.....D5	C636 .....D4	C844 .....D2	L254 .....D5	R05 .....C2	R405 .....F3	R802 .....G2	TP47 .....C2	TP146 .....A4
.....D5	C637 .....D4	C852 .....F1	L257 .....D5	R06 .....C2	R406 .....G4	R803 .....F3	TP48 .....C2	TP147 .....B4
.....D5	C638 .....C3	C853 .....G1	L258 .....D5	R07 .....C2	R427 .....F4	R804 .....F3	TP49 .....C3	TP148 .....A4
.....B1	C639 .....C3	C904 .....A1	L290 .....B1	R08 .....C2	R501 .....C4	R805 .....F3	TP50 .....C3	TP149 .....B5
.....B1	C640 .....C3	C905 .....A1	L291 .....B1	R09 .....C2	R502 .....C3	R806 .....G2	TP51 .....C3	TP150 .....B5
.....B1	C641 .....C3	C906 .....B2	L292 .....C1	R10 .....C2	R503 .....C3	R807 .....G2	TP52 .....C3	TP151 .....A5
.....C1	C642 .....C2	C907 .....B1	L293 .....B2	R11 .....C2	R504 .....C3	R808 .....G3	TP53 .....C3	TP152 .....B5
.....E4	C643 .....C2	D101 .....A5	L301 .....F4	R12 .....C2	R505 .....C3	R809 .....F3	TP54 .....C3	TP153 .....B5
.....E4	C644 .....C2	D111 .....C5	L302 .....F4	R13 .....C2	R506 .....C3	R810 .....F3	TP55 .....C3	TP154 .....B5
.....E4	C645 .....C2	D112 .....C5	L402 .....F4	R14 .....C1	R507 .....C4	R812 .....F3	TP56 .....C3	TP155 .....B5
.....E4	C646 .....D2	D301 .....E4	L403 .....G4	R15 .....D2	R508 .....B3	R820 .....E3	TP57 .....C3	TP156 .....C5
.....E5	C647 .....D2	D402 .....F3	L501 .....B3	R16 .....D2	R510 .....B3	R821 .....D3	TP58 .....C3	TP157 .....B5
.....E5	C648 .....C2	D403 .....E5	L502 .....C4	R17 .....D2	R511 .....B3	R822 .....D3	TP59 .....C3	TP158 .....B5
.....F4	C649 .....C2	D501 .....A3	L503 .....C3	R18 .....C1	R512 .....B5	R823 .....E2	TP60 .....C3	TP159 .....B4
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.....E4	C652 .....C3	D504 .....D5	L506 .....A3	R21 .....C2	R520 .....B3	R826 .....D1	TP63 .....C3	TP162 .....B4
.....E5	C653 .....C3	D505 .....D5	L507 .....A3	R22 .....D1	R521 .....B3	R828 .....E3	TP64 .....C3	TP163 .....C4
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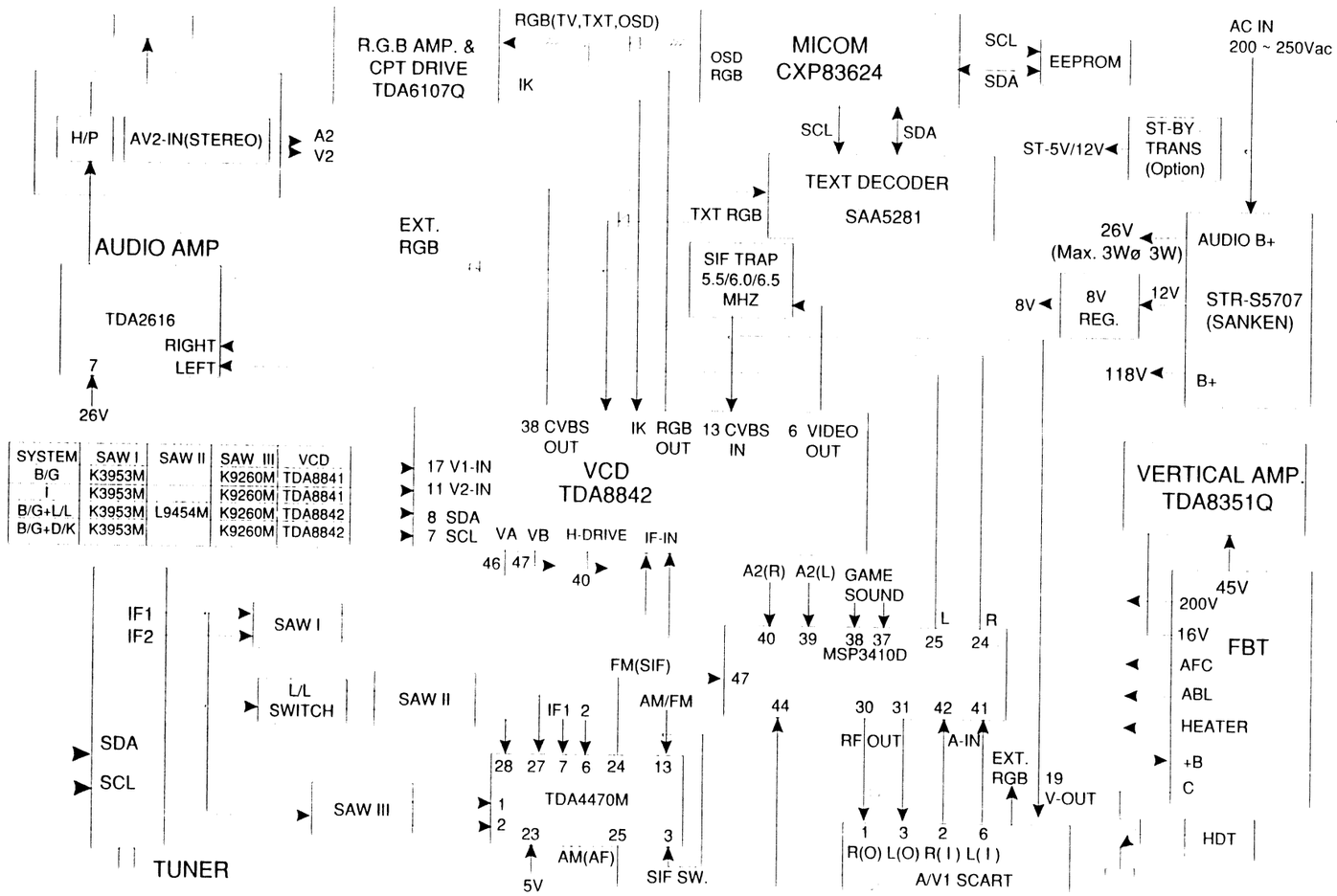
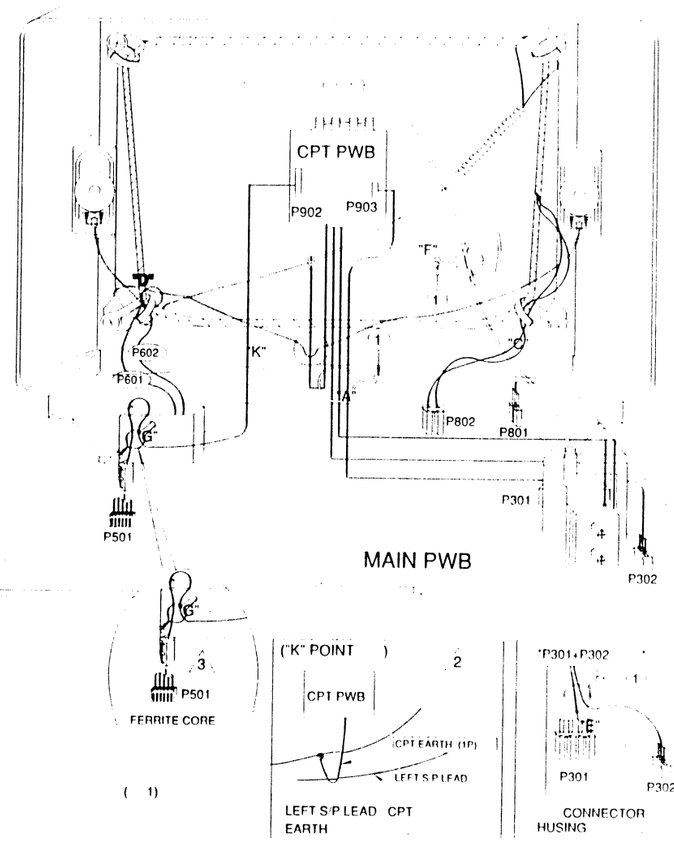
.....G4	C655 .....C3	D509 .....C4	L510 .....A3	R24 .....D1	R525 .....A3	R844 .....D3	TP66 .....D3	TP165 .....C4
.....G4	C656 .....C3	D510 .....C4	L511 .....A3	R25 .....D1	R529 .....D4	R851 .....F2	TP67 .....A2	TP166 .....C4
.....F4	C657 .....C3	D601 .....A3	L512 .....A3	R26 .....D1	R530 .....D4	R901 .....B1	TP68 .....A2	TP167 .....C4
.....G3	C658 .....C3	D602 .....A3	L513 .....A3	R27 .....D1	R531 .....D5	R902 .....B1	TP69 .....A2	TP168 .....C4
.....G3	C659 .....C3	D603 .....B2	L514 .....C4	R28 .....D1	R532 .....A4	R903 .....B1	TP70 .....A2	TP169 .....C4
.....G3	C660 .....D3	D604 .....A2	L515 .....C4	R29 .....D1	R533 .....A4	R907 .....A1	TP71 .....A3	TP170 .....C4
.....C4	C661 .....D3	D701 .....B3	L631 .....D3	R30 .....C1	R534 .....A4	R908 .....B1	TP72 .....A3	TP171 .....F3
.....B3	C662 .....D3	D702 .....B3	L632 .....C2	R31 .....D2	R535 .....A4	R909 .....A1	TP73 .....A3	TU101 .....B5
.....C4	C663 .....D3	D703 .....B3	L633 .....C3	R33 .....C1	R536 .....B4	R911 .....B2	TP74 .....A3	VD801 .....G1
.....C4	C664 .....C3	D704 .....B3	L691 .....B5	R37 .....D5	R537 .....B3	R912 .....A1	TP75 .....A3	X01 .....C1
.....B4	C665 .....C3	D741 .....G4	L693 .....B5	R48 .....C2	R548 .....B4	R913 .....A1	TP76 .....A3	X501 .....A4
.....B4	C674 .....B4	D742 .....E5	L701 .....D4	R57 .....D4	R549 .....C4	R914 .....A1	TP77 .....A3	X502 .....A4
.....B3	C675 .....B4	D743 .....E5	L702 .....D4	R58 .....D2	R550 .....C4	R916 .....B1	TP78 .....A3	X630 .....D3
.....B4	C676 .....B5	D744 .....D5	L742 .....E5	R60 .....D1	R551 .....B4	RL801 .....E2	TP79 .....A3	X701 .....D3
.....B4	C677 .....B5	D801 .....G2	L801 .....G2	R61 .....D1	R552 .....C4	SG901 .....B1	TP80 .....A3	Z101 .....B4
.....B3	C678 .....B5	D802 .....F3	L803 .....F2	R62 .....D1	R554 .....C4	SMA A5	TP81 .....A3	Z102 .....C4
.....B4	C679 .....B5	D803 .....F3	L804 .....F2	R63 .....D1	R555 .....C4	SMB G1	TP82 .....D3	Z103 .....C5
.....B4	C681 .....B5	D804 .....F3	L805 .....G2	R64 .....D1	R556 .....B5	SW01 .....D1	TP83 .....D3	Z630 .....C3
.....B3	C682 .....B5	D805 .....G2	L821 .....F3	R65 .....D1	R557 .....A4	SW02 .....D1	TP84 .....D4	ZD01 .....D5
.....A4	C683 .....B4	D806 .....G2	L822 .....D3	R66 .....G1	R568 .....D5	SW03 .....D1	TP85 .....D4	ZD03 .....B2
.....A4	C684 .....B5	D820 .....E2	L823 .....E3	R67 .....F1	R601 .....B2	SW04 .....D1	TP86 .....D4	ZD51 .....F1
.....A4	C685 .....B5	D821 .....E3	L824 .....E2	R68 .....F1	R602 .....A2	SW05 .....E1	TP87 .....D4	ZD101 .....A5
.....B4	C686 .....B4	D823 .....D3	L851 .....F1	R69 .....F1	R603 .....B2	SW06 .....E1	TP88 .....D4	ZD102 .....A4
.....A4	C687 .....C4	D824 .....D2	L901 .....A1	R71 .....B2	R604 .....A2	SW851 ....G1	TP89 .....D4	ZD231 .....A5
.....A4	C688 .....C4	D826 .....D2	LD01 .....F1	R72 .....C2	R605 .....A3	T101 .....B4	TP90 .....D4	ZD501 .....C4
.....B4	C690 .....B4	D827 .....D2	P101 .....A5	R80 .....D2	R606 .....A3	T102 .....B5	TP91 .....D4	ZD741 .....E5
.....B4	C692 .....B5	D828 .....D1	P302 .....G4	R81 .....D2	R607 .....A2	T103 .....B4	TP92 .....D4	ZD742 .....E5
.....B4	C696 .....B5	D829 .....E1	P501 .....A3	R82 .....C2	R608 .....A3	T401 .....F4	TP93 .....D4	ZD801 .....F3
.....A4	C697 .....C5	D830 .....E1	P502 .....B2	R84 .....D2	R609 .....B2	T501 .....C3	TP94 .....D4	ZD904 .....B1
.....B4	C698 .....B5	D831 .....D1	P601 .....A2	R89 .....B2	R610 .....B2	T502 .....C3	TP95 .....D4	
.....B4	C699 .....C5	D901 .....B2	P602 .....B2	R101 .....B5	R611 .....B3	T701 .....F5	TP96 .....D4	
.....B4	C702 .....D4	D902 .....A1	P803 .....G1	R102 .....A5	R612 .....A3	T801 .....E3	TP97 .....D4	
.....D5	C703 .....D4	D903 .....B1	P901 .....A1	R103 .....A5	R613 .....A3	T802 .....E1	TP98 .....D4	
.....B4	C704 .....D4	D904 .....A1	P902 .....B1	R104 .....A5	R614 .....A3	TH851 ....E2	TP99 .....D4	
.....B4	C705 .....E4	DB801 ....F2	P903 .....A1	R105 .....A5	R630 .....C2	TP1 .....A1	TP100 .....D4	
.....B4	C706 .....D3	F801A G2	P904 .....A2	R106 .....B5	R631 .....C2	TP2 .....A1	TP101 .....D4	

BLOCK DIAGRAM



WIRING DIAGRAM



TROUBLESHOOTING

NO RASTER

CHECK +B at D821 cathode

- Normal
  - Is the voltage at pin37 & 12 of IC501 8V?
    - No → Check the in/out of IC804
      - No → Check u-COM pin1 low?
        - No → Check /replace Q802
        - Yes → Check &replace IC501
      - Yes → Check pin40 of IC501(H-out)
        - No → Check &replace IC501
        - Yes → Check Q402 collector waveform
          - No → Check &replace IC501
          - Yes → Check T401 & each pin voltage
            - No → Check &replace IC501
            - Yes → Is the voltage at pin37 & 12 of IC501 8V?
    - Yes → Check pin40 of IC501(H-out)
- Abnormal
  - Check FUSE of AC line
    - Open → Check /replace Fuse,DB801,IC801
    - OK → Check the voltage of C805
      - 0V → Check /replace DB801,R851
      - 254~380V → Check the voltage of pin9
        - Check /replace D804,IC801,R801,802

NO RASTER / SOUND OK

Heate (6

OK

- Check HV, Screen voltage of CPT
  - Not OK → Check FBT T701
  - OK → Check/Replace CPT Board Components
- Check Ik Current IC501, pin

IC5 P5

NO SOUND / PICTURE OK

Check the 25V at

Abnormal

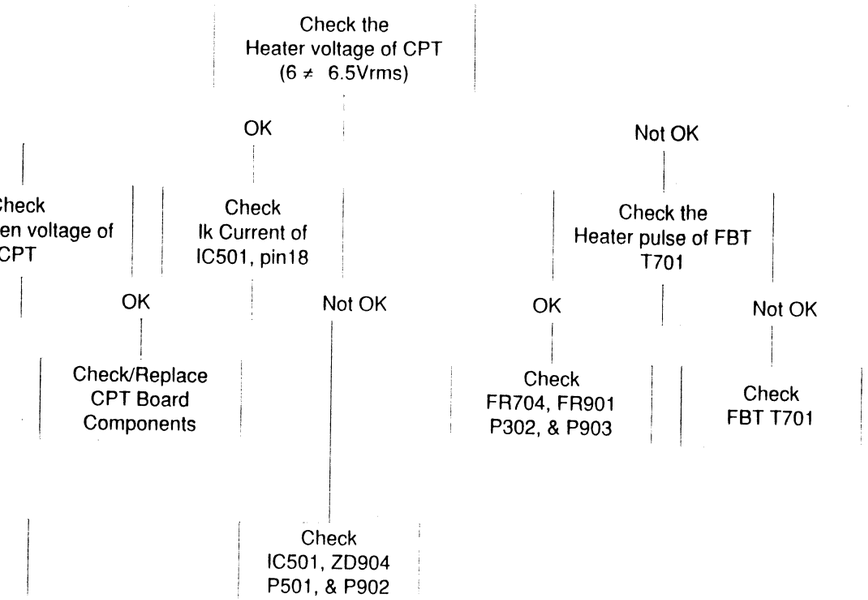
Check/Replace of FR824,D824

NO TELETEXT

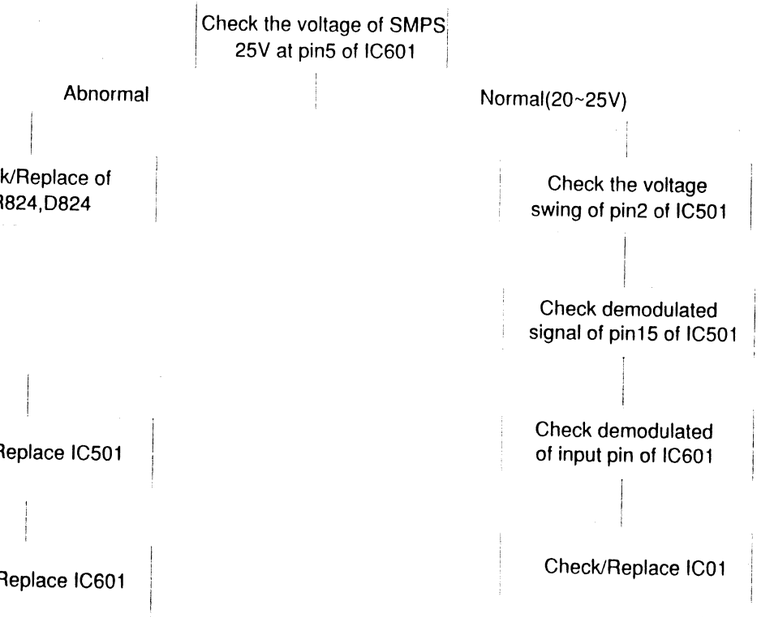
Check the voltage of IC701 pin11

- OK → Check CVBS signal at IC701 pin9
  - Not OK → Check / Replace Q701, X701, & IC501
  - OK → Check IC701& IICBus Line
    - OK → Check/Replace IC501
    - Check/Replace IC601
- 0V → Check 5V Supply Line of IC701
  - OK → Check IC701& IICBus Line
    - OK → Check/Replace IC501
    - Check/Replace IC601

SOUND OK



CTURE OK



NO PICTURE / NO SONUD